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A SECOND CENTURY

OF

ORCHIDACEOUS PLANTS.

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A SECOND CENTURY

OF

ORCHIDACEOUS PLANTS.

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EDITED BY

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'A MONOGRAPH OF ODONTOGLOSSUM,' 'THE ORCHIDACEÆ OF MEXICO AND GUATEMALA,' ETC.

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PREFACE.

The completion of the 'Second Century of Orchidaceous Plants' affords a suitable opportunity for saying a few words on the subject of Orchidology generally. At the time of the completion of the 'First Century' the Orchid mania had begun to lose somewhat of the intensity that marked the period from 1832 to 1852,—a circumstance that was chiefly attributable to a great falling off in the supply of new species, or of such species, at all events, as could then be made to submit to the skill of the cultivator. New arrivals there certainly were,—the collections of Warszewicz, for example,—but these were almost entirely formed in *cool* districts, and therefore perished under *hot* treatment nearly as rapidly as they were received. So great, indeed, was supposed to be the difficulty of succeeding with plants of this description, that collectors declined to purchase the most beautiful Odontoglossa, merely because they despaired of being able to grow them! And yet, as we now find, all that was required was to place the Orchids of cool countries in houses in which the temperature was not higher than that to which they had been habituated in their native wilds. It seems incredible that so obvious a principle should have been steadily ignored for more than twenty years; yet so it was! The accidental circumstance of our first Orchids having been coast or riverside plants, or denizens of the warm islands of the East and West Indies, leading as it necessarily did to *hot* treatment, had induced the notion that under no other system could any tropical Orchids be grown; and hence the ill-success that attended all our attempts to deal with the Orchids of the Mexican and Peruvian Andes, where the climate much more closely resembles that of the

greenhouse than of the stove. But now, happily, the irrational prejudice that clung to us so long has entirely disappeared, and with it the difficulty of growing a most charming section of the Orchid family.

It is probable that a greater number of fine species will be amenable to "cool treatment" than has ever been gathered together in our "hot" Orchid-houses; and thus cultivators have much novelty and pleasure yet to anticipate.

Some plants of the kind referred to have appeared in the present 'Century;' but a much larger proportion will doubtless find a place in the THIRD series, which it is intended to commence so soon as a sufficient number of suitable Plates shall have been accumulated.

J. B.

INDEX.

	Plate
Acropera Armeniaca	116
Ada aurantiaca	113
Aeranthus sesquipedalis	151
Aerides ampullaceum	186
Aerides dasypogon	193
Aerobion superbum	111
Amblyglottis veratrifolia	139
Angræcum eburneum	111
Angræcum sesquipedale	151
Angræcum superbum	111
Anguloa eburnea	159
Anguloa Ruckeri	144
Anguloa uniflora	159
Anguloa virginalis	159
Batemannia grandiflora	172
Bletia elegans	156
Bletia Masuca	139
Bletia præstans	128
Bolbophyllum reticulatum	190
Bulbophyllum Medusæ	148
Burlingtonia decora	110
Calanthe Masuca	139
Calanthe Veitchii, *hybrida*	106
Cattleya Aclandiæ	119
Cattleya Dowiana	191
Cattleya elegans	156
Cattleya Lindleyana	175
Cattleya maxima	131
Cattleya pumila, var. *major*	128
Cattleya quadricolor	108
Cœlogyne corrugata	188
Cœlogyne fuscescens, *var.* brunnea	104
Cœlogyne lagenaria	107
Cœlogyne ochracea	145
Cœlogyne pandurata	160
Chysis bractescens	138
Cirrhopetalum Medusæ	148
Cymbidium eburneum	177
Cymbidium Hookerianum	187
Cypripedium concolor	153
Cypripedium Fairieanum	140
Cypripedium hirsutissimum	149
Cypripedium Hookeræ	123
Cypripedium lævigatum	101
Cypripedium Schlimii	200
Cypripedium Stonei	141
Dendrobium albo-sanguineum	173
Dendrobium albo-viride	155
Dendrobium Amboinense	179
Dendrobium aureum	150
Dendrobium barbatulum	102
Dendrobium bigibbum	169
Dendrobium bilobum	169
Dendrobium chrysotoxum	124
Dendrobium crepidatum	129
Dendrobium dixanthum	197
Dendrobium eburneum	166
Dendrobium Falconeri	137
Dendrobium Farmeri	132
Dendrobium Fytchianum	102
Dendrobium hedyosmum	155
Dendrobium heterocarpum	150
Dendrobium Hillii	195
Dendrobium infundibulum	122

	Plate
Dendrobium Lowii	189
Dendrobium luteolum	185
Dendrobium Maccarthiæ	158
Dendrobium marginatum	105
Dendrobium Parishii	126
Dendrobium senile	147
Dendrobium xanthophlebium	105
Dendrochilum glumaceum	134
Épidendre paniculé	184
Epidendrum dichromum, *var.* amabile	112
Epidendrum myrianthum	163
Epidendrum nemorale	135
Epidendrum prismatocarpum	109
Epidendrum Uro-Skinneri	109
Epidendrum verrucosum	135
Epistephium Williamsii	103
Fieldia Lindleyana	142
Galeandra Baueri	157
Galeandra Devoniana	152
Galeandra dives	157
Galeottia grandiflora	172
Grammatophyllum Ellisii	176
Grammatophyllum speciosum	181
Huntleya cerina	183
Ionopsis paniculata	184
Lælia grandis	136
Lælia Lindleyana	175
Lælia præstans	128
Lælia Turneri	156
Lælia xanthina	180
Limodorum eburneum	111
Lissochilus Horsfallii	121
Luisia Psyche	174
Lycaste gigantea	198
Masdevallia candida	120
Masdevallia Tovarensis	120
Maxillaria cristata	117
Maxillaria Heynderycxii	198
Maxillaria venusta	118
Mesospinidium sanguineum	196
Miltonia Regnelli	182
Notilia bicolor	199
Odontoglossum cordatum	167
Odontoglossum hastilabium, var. *fuscatum*	154
Odontoglossum maculatum	167
Oncidium falcipetalum	154
Oncidium diadema	194
Oncidium Janeirense	165
Oncidium longipes	165
Oncidium serratum	194
Orchis foliosa	170
Paphinia cristata	117
Pescatoria cerina	183
Phalænopsis amabilis, *var.* grandiflora	114
Phalænopsis cornu-cervi	178
Phalænopsis Lowii	168
Phalænopsis Lüddemannia	133
Phalænopsis Schilleriana	171
Phalænopsis Sumatrana	146
Phalænopsis zebrina	146
Pilumna fragrans	164
Polychilos cornu-cervi	178
Renanthera Lowii	161
Saccolabium ampullaceum	186
Saccolabium curvifolium	130
Saccolabium miniatum	130
Sarcanthus erinaceus	193
Sarcanthus Stowellianus	193
Selenipidium Schlimii	200
Trichopilia candida	164
Trichopilia coccinea	115
Trichopilia crispa	115
Trichopilia fragrans	164
Trichopilia suavis	143
Trichopilia Turialvæ	162
Vanda Bensoni	192
Vanda gigantea	142
Vanda Lindleyana	142
Vanda Lowii	161
Vanda suavis	125
Warrea quadrata	127
Warscewizella quadrata	127

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 101.

CYPRIPEDIUM LÆVIGATUM.

Glossy-leaved Lady's-slipper.

Gen. Char. Perianthium patens. *Sepala* lateralia connata aut distincta, labello supposita. *Petala* libera, sæpius angustiora. *Labellum* inflatum, margine utrinque auriculato inflexo. *Columna* nana. *Stamina* 3, quorum unum sterile, centrale, dilatatum, inflexum, et 2 fertilia lateralia. *Antheræ* sub stamine sterili latentes, subrotundæ, biloculares. *Pollen* pulticeo-granulosum. *Stylus* subliber, teres, *stigmate* disciformi terminatus. (*Capsula* unilocularis.)—Herbæ *terrestres utriusque orbis, ab æquatore fere ad circulum arcticum vigentes.* Folia *radicalia aut caulina.* Flores *solitarii racemosi v. paniculati, speciosi. Lindl.*

Cypripedium *lævigatum;* foliis distichis ensiformibus coriaceis obtusiusculis lævigatis immaculatis, scapo pubescente stricto 3–5-floro brevioribus, bracteis ovatis acutis ovario 2-plo brevioribus, sepalis lateralibus connatis dorsali ovato acuto conformibus, petalis sepalis 4-plo longioribus linearibus sursum in margine setoso-glanduligeris contortis acuminatissimis, labello angusto oblongo acutiusculo, staminodio cordiformi emarginato. *Bateman.*

Cypripedium lævigatum. *Bateman, mss.* *Bot. Mag. t.* 5508.

This fine new *Cypripedium* was discovered by Mr. J. G. Veitch in the Philippine Islands, and by him sent to his father's establishment at Chelsea, where it bloomed for the first time in March, 1865. It is most nearly related to *C. Stonei*, the only other species known to have glossy leaves, but differs from it in the form and colour of its lip, which is small and of a dirty yellow, while that of *C. Stonei* is large, with a pink front on a white ground; the petals too of *C. Stonei* are not twisted, and only twice the length of the sepals, while in *C. lævigatum* they are much twisted, and at least four times the length of the sepals. Again, in *C. Stonei* the dorsal sepal is striped on the outside with crimson, but is white within, whereas in *C. lævigatum* the crimson stripes are all on the inside.

Mr. Veitch found *C. lævigatum* established upon the roots of the well-known *Vanda Batemanni*, to obtain which was one main object of his voyage, though he sought for it long in vain, and had almost begun to despair of ever meeting with it, when running his boat one day ashore in the bay of a small island, he was delighted and astonished to find the rocks by the coast covered with huge masses of the plant of which he was in quest. As the *Vanda* affects a warm situation, the *Cypripedium* should

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be treated in the same way. At Chelsea it is placed in the East India house, where it grows freely.

Descr. *Leaves* distichous, sword-shaped, less than a foot long, very thick, with a polished glossy surface. *Scape* twice the length of the leaves, slightly pubescent, bearing from two to five flowers. *Bracts* ovate, acute, half the length of ovary. *Dorsal sepal* an inch long, broadly ovate, hairy externally, striped inside with purple, ovate, acute; lateral sepals coalescing into one, resembling the upper one in form, but more acuminate, striped inside with green. *Petals* five or six inches long by little more than a quarter of an inch wide, tapering, crenulate along their upper margin, on which are some dark, hairy, glandular spots; at the base they are of a green tint, which changes into chocolate-purple for about three-fourths of their entire length. *Lip* small for the genus, about as long as upper sepal, unguiculate for less than half its length, then abruptly saccate, with a curious bilobed horny process on either side, of a dirty yellow throughout. *Ovary* pubescent, about two inches long, purplish-brown. *Column* or sterile stamen heart-shaped at its apex, and emarginate.

Fig. 1. Front view of lip. 2. Side view of sterile stamen (column), with its appendages. 3. Front view of ditto:—*magnified.*

W. Fitch, del.

Vincent Brooks, Imp.

Plate 102.

DENDROBIUM BARBATULUM.

Bearded-lipped Dendrobium.

Gen. Char. Sepala membranacea, erecta vel patentia, lateralibus majoribus obliquis cum basi productâ columnæ connatis. *Petala* sepalo supremo sæpius majora, nunc minora, semper membranacea. *Labellum* cum pede columnæ articulatum vel connatum, semper sessile indivisum vel trilobum, sæpius membranaceum, nunc appendiculatum. *Columna* semiteres, basi longe productâ. *Anthera* bilocularis. *Pollinia* 4, per paria collateralia.—Herbæ *epiphytæ, nunc caulescentes, nunc rhizomate repente pseudobulbifero.* Folia *plana, sæpius venosa.* Flores *solitarii fasciculati v. racemosi, speciosi. Lindl.*

Dendrobium *barbatulum;* caulibus erectis cylindricis vaginatis, foliis remotis oblongo-lanceolatis, racemis terminalibus (lateralibusque, *Lindl.*) strictis multifloris, perianthium explanatum album, sepalis lanceolatis, petalis latissime obovatis, labello trilobo, basi barbatulo, lobis lateralibus parvis oblongis incurvis purpureo-roseis, intermedio latissime obcordato apiculato integerrimo petalorum magnitudine, calcare obtuso breviusculo.

Dendrobium barbatulum. *Lindl. in Wall. Cat. n.* 2013. *Gen. et Sp. Orchid. p.* 84. *Paxton, Fl. Gard. v.* 3. *p.* 113, (woodcut.) *Batem. in Gard. Chron.* 1864, *p.* 269. *Bot. Mag. t.* 5444.
Dendrobium Fytchianum. *Batem. in Gard. Chron.* 1864, *p.* 100.

This very beautiful plant is a native of Moulmein, whence—after having disappeared from our collections for twenty years—it was reintroduced in 1863, through the exertions of the Rev. C. S. P. Parish, by whom it was forwarded to Messrs. H. Low and Co., of the Clapton Nursery.

The flowers are of the most dazzling whiteness throughout, except that the lateral lobes of the lip are faintly tinged with crimson, and its disk adorned with a yellow beard. They are scentless, and borne in graceful racemes a span long, some of them consisting of from ten to twenty flowers. The latter continue fresh for weeks, and are the more welcome because produced (under ordinary circumstances) in the depth of winter. Unfortunately, the slender linear leaves fall off before the blossoms have had time to expand, but this drawback need not be allowed to interfere with the general effect of the plant in a collection of Orchids, where what is wanted in foliage may be easily obtained by judicious grouping with other species. It grows freely if suspended on a block of wood, or—which is better still—in a very shallow earthenware pot or dish. It requires a decided season of rest.

Fig. 1. Column and spur. 2. Pollen-masses. 3. Lip:—*magnified.*

3

2.

W. Fitch, del et lith.

Vincent Brooks, Imp.

Plate 103.

EPISTEPHIUM WILLIAMSII.

Mr. Williams's Epistephium.

Gen. Char. Perianthium basi urceolo dentato cinctum. *Sepala* patentia v. reflexa, libera, lateralia labello supposita. *Petala* latiora v. angustiora. *Labellum* sessile, liberum, indivisum, circa columnam convolutum, disco barbatum v. cristatum. *Columna* semiteres, marginata, infra stigma 2-tuberculata, apice membranacea, dilatata, 3-fida, lobo medio cucullato antherifero. *Anthera* terminalis persistens, loculis approximatis ½-quadrilocularibus. *Pollinia* 4, compressa, basi retroplicata.—Herbæ *Americæ æquinoctialis, terrestres.* Folia *nervosa, evaginata.* Flores *magni, conspicui. Lindl. Gen. et. Sp. Orchid.* 432.

Epistephium *Williamsii;* foliis lineari-oblongis acutis semi-amplexicaulibus, marginibus recurvis valde coriaceis lævibus nitidis, nervis parallelis non reticulatis, sepalis lineari-oblongis acutis, petalis oblongis sepalis latioribus, labelli lobo terminali suborbiculato 2-fido marginibus crenulatis, disco medio longe cristato.

Epistephium Williamsii. *Hook. fil. ms. Bot. Mag. t.* 5485.

A very curious and most beautiful plant, introduced from Bahia by C. H. Williams, Esq., to the Royal Gardens at Kew, where it flowered finely under Mr. Smith's excellent management in the summer of 1864. It belongs to the genus *Epistephium*, which inhabits the tropics of South America, and is distinguished from the very closely allied *Sobralia*, by the toothed calyculus crowning the ovary. The genus is described as having strongly reticulated nerves on the leaf, but this is perhaps best seen in the dried plant; the leaves of our species are very coriaceous, glossy, and almost nerveless; nothing can exceed their brilliant, glossy green surface. Many other species of this splendid genus remain to be introduced, especially from Brazil and Peru, and would well repay any amount of labour expended in obtaining them, for they are as easily cultivated as the *Sobralias*, and more compact in their habit.

Descr. *Stems* from an underground root of tufted, fleshy fibres, several together, stiff, a foot to eighteen inches high, cylindrical. *Leaves* alternate on the upper part of the stem, three to four inches long, linear-oblong, semi-amplexicaul, acute, very glossy-green, nerves very indistinct, not reticulated. *Flowers* five to eight, in a terminal spike, three inches in diameter, of a fine light red-purple colour. *Bracts* small, ovate, acute. *Ovary* one inch long. *Calyculus* very short, shortly six-toothed. *Sepals* one to one and a quarter inch long, linear-oblong, the dorsal a little obovate. *Petals* as long, but

much broader. *Lip* with the middle lobe bifid, margins somewhat undulate, of the same colour as the petals, but with two whitish areas on the disk, which are surrounded with a deeper purple; crest of hairs on the disk small, long, yellowish. *Column* with narrow wings. *Stigma* with its edges crenulate.

Fig. 1. Upper part of ovary, calyculus, and lip. 2. Base of lip and column. 3. Upper part of column, showing the stigma and anther:—*all magnified*.

W. Fitch, del et lith.

Vincent Brooks, Imp

Plate 104.

CŒLOGYNE FUSCESCENS, *var.* BRUNNEA.

Reddish-brown Cœlogyne.

Gen. Char. Sepala conniventia v. patentia, libera (nunc invicem agglutinata), æqualia, petaloidea, sæpius basi obtusa. *Petala* conformia, aut multo angustiora. *Labellum* cucullatum trilobum v. indivisum, petaloideum, basi sæpe saccatum, venis 2–3 pluribusve parallelis cristatis, nunc cum basi columnæ connatum. *Columna* erecta, libera, alata, apice membranaceo-marginata. *Stigma* prominens, alte excavatum, bilabiatum. *Pollinia* 4, libera, incumbentia, materie glandulosâ cohærentia. *Anthera* infra apicem columnæ inserta, mobilis, vix decidua. Herbæ *epiphytæ vel terrestres* Asiæ tropicæ, *pseudobulbosæ*. Folia 1–2, *nervosa*. Racemi, *aut* flores *solitarii, terminales, sæpe e squamis corneis erumpentes*. Flores *albi rosei flavidi aut brunneo-maculati, immo virescentes, sæpissime speciosi. Lindl.*

Cœlogyne *fuscescens*, var. *brunnea;* pseudobulbis elongatis teretibus, foliis latis oblongis plicatis utrinque acutis, racemo nutante paucifloro, bracteis deciduis, sepalis lanceolatis acuminatis, petalis angustioribus conformibus, labelli trilobi lobis lateralibus porrectis subacutis, lobo medio subquadrato plano lineis 3 elevatis juxta basin. *Lindl. quibusdam mutatis.*

Cœlogyne fuscescens, *var.* brunnea. *Lindl. Fol. Orch., et in Gard. Chron.* 1848, *p.* 71. *cum icone. Bot. Mag. t.* 5494.

This beautiful *Cœlogyne* was first seen in our gardens about the year 1848, when a notice of its flowering appeared in the 'Gardeners' Chronicle,' but it would seem to have been almost immediately lost,—at all events I am not aware that it has ever blossomed a second time. This circumstance is the more remarkable since the plant, which Messrs. Hugh Low and Co. have lately re-introduced, is now found to grow freely and flower profusely under the most ordinary treatment. It is a native of Moulmein, from whence it was sent by Mr. Parish to Messrs. Low. It has blossomed in several places, but the finest specimens were produced in Mr. Day's collection, and from these the accompanying figure was prepared. The species flowers in the winter months, and continues in beauty for several weeks. It is among the best of the Cœlogynes.

Descr. *Pseudobulbs* round and rather narrow, from three to four inches long, and nearly the same distance apart, bearing two broad plicated *leaves*, tapering at either end. *Raceme* nodding, appearing before the leaves, and usually bearing from three to eight *flowers*, all expanded at the same time, and continuing long in perfection. *Bracts* sheathing, speedily falling off. *Sepals* (of which the dorsal is the broadest) lanceolate-acuminate, much wider than the slender linear *petals;* both are upwards of an inch

long, and of a very delicate texture, white, with a yellowish tint. *Lip* (in the variety represented in the Plate) distinctly three-lobed, the lateral lobes stretching forward and coming to a bluntish point, which is slightly turned backwards, whitish outside, but internally speckled and margined with brown; the middle lobe is nearly square, whitish at the edges, but passing into rich chestnut-brown at its base, where are three elevated longitudinal streaks of a brilliant orange. *Column* slightly bent, and wingless.

Fig. 1. Column and anther. 2. Pollen-masses. 3. Front view of the labellum:—*magnified*.

W Fitch del

Vincent Brooks, Imp.

Plate 105.

DENDROBIUM XANTHOPHLEBIUM.

Yellow-veined Dendrobium.

Gen. Char. Sepala membranacea, erecta v. patentia; lateralibus majoribus obliquis, cum basi productâ columnæ connatis. *Petala* sepalo supremo sæpius majora, nunc minora, semper membranacea. *Labellum* cum pede columnæ articulatum v. connatum, semper sessile, indivisum vel trilobum, sæpius membranaceum, nunc appendiculatum. *Columna* semiteres, basi longe productâ. *Anthera* bilocularis. *Pollinia* 4, per paria collateralia.—Herbæ *epiphytæ, nunc caulescentes, nunc rhizomate repente pseudobulbifero.* Folia *plana, sæpius venosa.* Flores *solitarii, fasciculati v. racemosi, speciosi. Lindl.*

Dendrobium *xanthophlebium;* caulibus erectis pedalibus et ultra articulatis angulatis, apice præcipue foliosis, foliis lineari-lanceolatis, floribus lateralibus geminatis albis, sepalis lanceolatis, petalis paulo latioribus brevioribus, labello unguiculato subpanduriformi trilobo, lobis lateralibus erectis intus cinnabarinis, labio medio suborbiculari undulato, disco cinnabarino albomarginato.

Dendrobium xanthophlebium. *Parish. ms. Lindl. Orchidology of India, in Linn. Trans.*

Dendrobium marginatum. *Batem. in Bot. Mag. sub t.* 5454.

This very pretty *Dendrobium* is a native of Moulmein, and was discovered by the Rev. C. S. P. Parish and sent to Messrs. Hugh Low and Co. in 1863. It has flowered in several collections, but nowhere in greater beauty than in that of Mr. Rucker, who furnished the specimens from whence the figure is taken.

The absence of hairs on those stems that I first examined caused me to overlook the description of the species given *among the nigro-hirsute section of the genus* in Dr. Lindley's Orchidology of India, but the subsequent appearance of an abundant crop of hair on the young growth led to a re-examination of the subject, and to the detection of the error, which I am glad to take this opportunity of correcting. *D. xanthophlebium* is a very distinct and striking species, and much more readily grown than some others of its section. It flowers in the spring.

Descr. The *stems*, for they can scarcely be called pseudobulbs, grow in clusters a foot and more long, are rather thicker than a swan's quill, jointed (the joints slightly sheathing), angled; the younger ones bearing a few sparse linear-lanceolate *leaves* towards their extremity. *Flowers*, from the joints of the old stems, also towards the upper part, generally in pairs, from one short *peduncle*. *Sepals* and *petals* pure white,

the former lanceolate, the latter nearly ovate, much spreading. *Lip* moderately large, tapering below into a long *claw*, as long as the *spur*, three-lobed; *side lobes* large, erect, spotted with deep orange; the *disk* has three elevated ridges, the *terminal lobe* is subrotund, waved, obtuse, with a cinnabar-orange disk and a white margin, whence, probably, the specific name. *Column* rather short, the truncated *anther-case* sunk, as it were, in the *clinanthium*. *Pollen-masses* four.

Fig. 1. Lip and spur. 2. Column, spur, and base (only) of the labellum. 3. Front view of the labellum. 4. Pollen-masses:—*all more or less magnified.*

2.

W. Fitch, del.

Vincent Brooks, Imp

PLATE 106.

CALANTHE VEITCHII: *hybrida.*

Mr. Veitch's Calanthe. Garden hybrid.

A hybrid between CALANTHE VESTITA (*Bot. Mag. t.* 4671) and LIMATODES ROSEA (*Bot. Mag. t.* 5312). CALANTHE *Veitchii:* hybrida. *Bot. Mag. t.* 5375.

The following account of this singular production appeared in the 'Gardeners' Chronicle' for 1859, p. 1016:—

"Of all the beautiful Orchids obtained by hybridizing, this curious plant stands first. It forms a tuft of flower-stems one foot and a half high, loaded with blossoms of the richest rose-colour of different degrees of intensity. Mr. Dominy produced it in the Nursery of Messrs. Veitch and Sons, of Exeter, by fertilizing *Limatodes rosea*, a rich rose-coloured beautiful Indian Orchid, with that variety of the white *Calanthe vestita* which has a deep purple spot at the base of the lip. The result has been most curious: the hybrid, although completely intermediate between the two parents, yet shows a rather greater tendency to its mother than its father. Of the father it has exactly the manner of growth and the peculiar four-lobed lip; but it has the rich colour of its mother, and some other peculiarities of her lip, along with an entire correspondence in form with her column.

"The following comparison of the three will explain this still more clearly:—

"A.—CALANTHE VESTITA; *Male plant.*

"1. Pseudobulbs fleshy, conical, bluntly angular.

"2. Spur curved.

"3. Flowers white, with a deep purple spot at the base of the lip.

"4. Sepals and petals secund.

"5. Lip adhering to the column, flat at base, with four deep blunt lobes.

"6. Column deep, large, compressed, quite smooth.

"7. Pollen-masses eight, deep yellow, adhering by two smooth separate straps.

"LIMATODES ROSEA: *Female plant.*

"1. Pseudobulbs narrow, stem-like.

"2. Spur straight.

"3. Flowers, a clear uniform rose-colour.

"4. Sepals and petals spreading equally.

"5. Lip free from the column, rolled up at the base, undivided.

"6. Column small, terete, downy at the back.

"7. Pollen-masses eight, pale-yellow, adhering to two rough connate straps.

"Calanthe Veitchii: hybrid *between the two foregoing.*

"1. As in A. 2. As in B., but longer. 3. As in B. 4. As in B. 5. As in A., but rolled up at the base, as in B. 6. As in B. 7. As in B."

The plant from which the figure is taken was communicated by Messrs. Veitch and Sons. There are several varieties, differing in the intensity of the colouring, but all of them amongst the most ornamental and popular decorations of the Orchid-house in the gloomy months of November and December. The offspring grow as easily as either of their parents, which, it is needless to say, are of all Orchids the most easy to manage.

Fig. 1. Column, spur, and ovary. 2. Pollen-masses of *C. Veitchii: magnified.*

W. Fitch, del.

Vincent Brooks, Imp.

Plate 107.

CŒLOGYNE LAGENARIA.

Flask-shaped Cœlogyne.

Gen. Char. Sepala conniventia v. patentia, libera, æqualia, petaloidea. *Petala* nunc sepalis conformia, nunc linearia. *Labellum* cucullatum, sæpius trilobum, lineis disci elevatis v. cristatis, nunc integerrimum ecristatum (in § *Panisea*). *Columna* erecta, libera, margine alata, apice dilatata, nunc cucullata, stigmate bilabiato. *Anthera* bilocularis septo medio non partibili, infra apicem columnæ inserta. *Pollinia* 4, libera ($\frac{oo}{oo}$), incumbentia, nunc basi materie granulosa cohærentia.—Herbæ *supra arbores et saxa vigentes*, foliorum *basibus* in pseudobulbos *dilatatis*, rhizomate *nunc crasso squamoso, nunc obsoleto.* Folia *coriacea, sæpius venis distinctis æqualibus nunc quibusdam crassioribus costata v. plicata.* Racemi *terminales v. radicales e squamis (bracteis sterilibus) corneis erumpentes.* Flores *speciosi, sæpe odorati. Lindl.*

Cœlogyne (Pleione) *lagenaria;* pseudobulbis lagenæformibus nebulosis, bractea cucullata acuta basi longe angustata sepalis petalisque lineari-lanceolatis, labello rotundato integerrimo emarginato lineis 5-barbatis. *Lindl.*

Cœlogyne lagenaria. *Lindl. in Paxt. Fl. Gard. v.* 2 *t.* 39. *f.* 2. (*sub* Pleione); *Fol. Orchid. Cœlogyne, p.* 15. *n.* 39. *Reichenb. fil. in Walp. Annal. Bot. v.* 6. *p.* 234. *Bot. Mag. t.* 5370.

"The genus *Pleione* of Don (corresponding with *Gomphostylis*, Wall.)," wrote Dr. Lindley, "possesses something so peculiar in habit, that it would be desirable to find some means of separating them from *Cœlogyne.* Occasionally I have imagined that they might be defined by such characters as a saccate lip, an undivided lip furnished by bearded and lamellate veins, or by the divisions of the flower tapering to the base instead of being obtuse; but the last peculiarity, on which I had much relied, is so entirely set aside by *C. Hookeriana*, which has the form of *C. cristata*, that after all I find it necessary to leave them as an alpine form of *Cœlogyne*, in the hope that future observers will discover some sound generic character. All the species are alpine. The secret of their successful cultivation in England lies in keeping them cool and dry while at rest, and forcing them with heat, moisture, and light as long as they are inclined to grow." So far Dr. Lindley; subsequent experience has, however, proved that the Pleiones may, most of them, be cultivated all the year in a cool house. Such, at least, is Mr. Rucker's plan, and no plants could be in better health than his. *C. lagenaria*, as it does not grow at quite so high an elevation as the others, may perhaps be found to prefer rather more warmth. All the species—and many fine ones remain to be introduced—are natives of

the Himalaya, in which they take the place of the autumn crocuses in Europe, flowering much in the same way (*i. e.* without leaves), and about the same time. The present beautiful species flowered at the Nursery of Mr. Jackson, at Kingston. It is unfortunate that the leaves do not appear along with the blossoms, but notwithstanding this defect, the markings of the latter and the singular form of the pseudobulbs will always recommend the species to every Orchid-grower.

Descr. *Pseudobulbs* clustered, very remarkable in form, somewhat flask- or bottle-shaped, flattened below the conical neck, and there lapping over, like the lid of a box; they are green mottled with brown, and more or less wrinkled, and in a young state bear a solitary *leaf* at the summit. *Scapes* one to two, from the very base of and shorter than the pseudobulbs, stout, clothed with large concave ovate imbricated *bracts*. *Flowers* large, solitary, very handsome. *Sepals* and *petals* uniform, narrow lanceolate, rose-colour, spreading. *Lip* very large, convolute at the base around the column, spreading, waved and crisped at the margin, white mottled with yellow and deep-purple. *Column* elongated.

Fig. 1. Column and anther. 2. Pollen-masses. 3. Front view of the lip:—more or less *magnified*.

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 108.

CATTLEYA QUADRICOLOR.

Four-coloured Cattleya.

Gen. Char. Sepala membranacea vel carnosa, patentia, æqualia. *Petala* sæpius majora. *Labellum* cucullatum, columnam involvens, trilobum vel indivisum. *Columna* clavata, elongata, semiteres, marginata, cum labello articulata. *Anthera* carnosa, 4-locularis, septorum marginibus membranaceis. *Pollinia* 4, caudiculis totidem replicatis.—Herbæ *epiphytæ (Americanæ), pseudobulbosæ.* Folia *solitaria vel bina, coriacea.* Flores *terminales speciosissimi, sæpe e spathâ magnâ erumpentes. Lindl.*

Cattleya *quadricolor;* caulibus angustis compressis monophyllis, pedunculis 1–2-floris, sepalis oblongo-lanceolatis obtusis, petalis spathulatis 3-plo latioribus, labello indiviso cucullato haud dilatato, margine anteriore subcrispo. *Bateman, Gard. Chron.* 1864, *p.* 269.

Cattleya quadricolor. *Lindl. mss., Bot. Mag. t.* 5504.

Cattleya quadricolor. *Batem. in Gard. Chron. l. c.*

This beautiful Cattleya was sent many years ago to Mr. Rucker from New Granada. by one of his correspondents who met with a solitary plant of it on the upper waters of the Rio Magdalena. It soon flowered in Mr. Rucker's collection, and the specimens then produced were forwarded to Dr. Lindley, who, being satisfied that it was a new species, gave it the appropriate name of *C. quadricolor*, in allusion to the four colours. while, yellow, lilac, and purple, that are observable in its blossoms. The latter are produced in the winter months, and continue in perfection a long time, but they do not spread themselves out so freely as those of most other Cattleyas do.

When I first examined the flowers of *C. quadricolor* I felt no doubt that Dr. Lindley was right in regarding it as new; and even to the present time I have seen no Cattleya with such closely imbricated white flowers, nor are its long upright narrow pseudobulbous stems to be matched among the extensive importations that the Horticultural Society, the Messrs. Low, and others have received from the country in which it was originally found. Yet this very circumstance suggests a doubt as to whether it may not ultimately prove to be what botanists call a *peloria* (*i.e.* a monster) of some other species, for if it were really an independent form, it seems scarcely credible that none of the collectors now (*i. e.* 1865) in New Granada should have met with it. But even if admitted to be a *peloria*, to what species must it be referred? The answer to this question opens a rather extensive field of inquiry, and implicates a large number of re-

puted species, including *C. labiata*, *C. Mossiæ*, *C. pallida*, *C. Warszewiczii*, *C. Trianæi*, and *C. Wageneri*, which are found distributed over a vast range of territory extending from the heart of Mexico to the capital of Brazil. The first on the list, *C. labiata*, was found some thirty or forty years ago—where alas! it is not to be found now—on the well-known Organ Mountains in the vicinity of Rio Janeiro. The next, *C. Mossiæ*, was found on the Spanish main, and as it always bloomed in the spring or summer, and had never more than two or three flowers on a scape, it was long considered distinct from *C. labiata*, which had invariably bloomed in November, and produced double the number of flowers. But in June (1865) I received luxuriant specimens of what was undoubtedly *C. labiata* from the garden of the Bishop of Winchester, while plants have been imported of *C. Mossiæ* producing four to six flowers on a scape, and thus some of the most marked distinctions between the two supposed species have entirely disappeared. Of *C. pallida* a solitary plant was found by Hartweg on his way to Oaxaca; this has recently flowered at Knypersley, and proves to be, as Reichenbach suspected, identical with the *C. Warszewiczii delicata* of Mr. Warner, which was found by the traveller whose name it bears in the interior of New Granada. This again is indistinguishable, except in colour, from *C. Wageneri* of the same country, and which has very naturally been regarded as nothing but a white variety of *C. Mossiæ*. Finally Mr. Weir, the zealous collector of the Horticultural Society, mentions in one of his letters from Bogotá, that he met with innumerable varieties—white, lilac, and rose—of a beautiful Cattleya that he gathered in that neighbourhood, and the dried specimens of which exactly resemble the flowers of *C. labiata*, *C. Trianæi*, and *C. Warszewiczii*. From a collation of the facts before us, there would seem to be at least a high probability that all the six so-called species above referred to are in reality varieties of a single form that spreads itself—like *Epidendrum ciliare* and *E. cochleatum*—over the whole Orchid-growing region of tropical America. Whether or no *C. quadricolor* itself will have to be added to the list of cancelled species is a question that time only can determine. Meanwhile the hybridizer plies his trade, and will speedily render "worse confounded" that "confusion" which is sufficiently perplexing, even as it comes to us from the hand of nature.

Descr. *Pseudobulbous stems* from six inches to a foot long, perfectly upright, narrower and more compressed than in other allied species. *Leaves*, one on each stem, narrow, strap-shaped, acute, usually about ten inches long. *Peduncle* issuing from a large spathe, and bearing one or two flowers about four inches across, but not so much spread open as is usual in this genus. *Sepals* pure white, oblong-lanceolate, obtuse. *Petals* slightly spathulate, three times wider than the sepals, and, like them, of the purest white. *Lip* undivided, cucullate, but not much opened out at the apex, which is somewhat curled, and of a deep purple; below this there is a band of white, then streaks of yellow, the residue being rosy-lilac. *Column* entirely hidden by the lip.

Fig. 1. Side view of column,—*magnified*.

W. Fitch, del

Vincent Brooks, Imp.

Plate 109.

EPIDENDRUM PRISMATOCARPUM.

Prism-fruited Epidendrum.

Gen. Char. Sepala patentia, subæqualia, lateralibus basi haud productis. *Petala* nunc conformia et æqualia, nunc diversissima. *Labellum* unguiculatum, cum columnâ parallelum et omnino v. parte connatum: limbo integro v. diviso, basi sæpius callo duplici, costâ v. tuberculo nunc interjectis instructo; nunc verisimiliter in calcar productum, pedicello immersum ideoque columnæ cuniculum formans. *Columella* elongata, *clinandrio* marginato sæpe fimbriato, semiteres ecornis, basi sæpius caniculata. *Pollinia* 4, coriacea, æqualia, compressa; *caudiculis* totidem replicatis; *glandulâ* liberâ nullâ. *Anthera* carnosa, 2–4-locularis.—Herbæ *epiphytæ* Americæ calidioris, *nunc terrestres.* Caulis *nunc pseudobulbosus nunc elongatus, foliosus.* Folia *carnosa rarissime venis elevatis striata.* Flores *solitarii, spicati, racemosi, corymbosi, vel paniculati, terminales vel laterales, sæpius siccati coriacei,* raphibus *farcti. Lindl.*

Epidendrum *prismatocarpum;* pedunculo elongato multifloro, ovario abbreviato triptero, sepalis petalisque ligulato-lanceolatis acutis, labello unguiculato cordato acuminato utrinque obtuse auriculato, cristâ bicruri lineâ interjectâ lanceolatâ, clinandrii appendice quadratâ tridentatâ. *Lindl.*

Epidendrum prismatocarpum. *H. G. Reichenbach, in Bot. Zeit.* 1852. *p.* 729. *Bot. Mag. t.* 5336. *Lindl. Fol. Orchid. Epidendr. p.* 9. *n.* 23. *Warner, Select. Orchid. t.* 9.

Epidendrum Uro-Skinneri. *Hortulan.*

This peculiar-looking species of *Epidendrum* appears to have been cultivated in some gardens under the name of *E. Uro-Skinneri*, but is undoubtedly, as Dr. Lindley points out, identical with the plant figured in the Bot. Zeit. for 1852, where it was published from dried specimens under the name of *E. prismatocarpum*, so named on account of the three sharp angles or wings of the ovary. It is an inhabitant of Chiriqui, Veragua, Central America, and is one of the many interesting discoveries of the botanical traveller Warszewicz. Reichenbach, who appears to have examined an inferior variety, says that the "flowers are small, and lip brown, dotted;" but such is not the case in the living plants cultivated in this country.

E. prismatocarpum, which is one of the very best of its race, is readily grown, if not kept too warm; the temperature of the Cattleya-house seems to suit it best. It flowers in May and June, lasting a very long time in beauty. Messrs. H. Low and Co., Mr. Reed of Burnham, Somerset, and the Bishop of Winchester, have all flowered the plant in great perfection.

Descr. *Pseudobulb* ovate, tapering upwards into a kind of neck, green, obscurely furrowed, crowned with three ligulate scarcely coriaceous, flaccid *leaves*, almost a foot long, and an inch and a half broad. *Scape* from the centre of these leaves terete, erect. *Raceme* almost a foot long, many-flowered. *Bracts* minute. *Pedicels* scarcely an inch long, terminated by a turbinate triquetrous *ovary*. *Sepals* and *petals* uniform, spreading, an inch and more long, oblong-lanceolate, shortly acuminate, pale-yellow, with many dark-purple blotches, variable in size, fewer on the sepals than on the petals, or sometimes none. *Lip* the same length as the petals, unguiculate, white, greenish at the base: two lateral lobes short and rounded, very obtuse, middle lobe trowel-shaped, very acuminate, the upper side with a large purple-lilac blotch, varying in intensity: the disk of the lip has an elevated ridge, with a longitudinal cleft in the lower half. *Column* semiterete, terminated by three fimbriated lobes, with a brown blotch at the base.

Fig. 1. Column and lip, seen from above. 2. Front view of the column. 3 and 4. Pollen-masses:—*magnified.*

W. Fitch, del.

Vincent Brooks, Imp.

Plate 110.

BURLINGTONIA DECORA.

Neat Burlingtonia.

Gen. Char. Perianthium membranaceum, convolutum, obliquum. *Sepala* unguiculata, labello breviora, basi a petalis distincta, lateralia basi concava, connata, labello subposita. *Petala* unguiculata, labello parallela, sepalis longitudine æqualia, sed latiora. *Labellum* unguiculatum, bilobum basi cornutum, vel muticum, cum columnâ parallelum, apice dilatatum, ungue canaliculato lamellato. *Columna* teres, longe clavata, nunc apice appendicibus duabus coloratis aucta; *clinandrio* dorsali, *stigmate* utrinque cornuto. *Antheræ* uniloculares. *Pollinia* 2, postice excavata, *caudiculâ* subalatæ elastice adnata.—Herbæ *epiphytæ*, pseudobulbis 1–2-*phyllis*, *basi foliatis*. *Lindl.*

Burlingtonia *decora;* caulibus elongatis hinc inde proliferis, pseudobulbis ovatis compressis monophyllis, sepalis petalisque (albis roseo-maculatis) acutis, labelli ungue sepalis petalisque longiore, calcare integro, columnâ apice appendicibus 2 falcatis erectis pilosis auritâ.

Burlingtonia decora. *Lemaire, & Hook. Bot. Mag. t.* 4834.

Var. *picta;* pseudobulbis orbicularibus compressis, foliis brevioribus acutissimis, sepalis petalisque pulcherrime maculis purpureo-atrosanguineis pictis. *Bot. Mag. t.* 5419.

Of this pretty *Burlingtonia* there are many varieties, but that from which the figure is taken, and which was introduced from Brazil by Messrs. H. Low and Co., is one of the best. It has somewhat the habit of *B. rigida*, but the pseudobulbs are not nearly so far apart, and the flowers much more freely produced. All the *Burlingtonias* should be grown in shallow pots or pans, filled with nothing but moss and potsherds, through which their long roots will freely protrude, andhang down a yard or more in the air. The latter, however, should always be kept moist, especially during the season of growth. Treated in this way, they grow and (with the exception of *B. rigida*) flower readily. Most of them usually bloom during the summer months, but there are not a few that do so nearly all the year round. They are best grown with the *Dendrobia*, that is in a temperature warmer than what *Cattleyas* require, but not so warm as that in which the East Indian air-plants and African *Angræca* delight.

Fig. 1. Side view of the column and lip and spur. 2. Front view of the column. 3. Pollen-masses :—*magnified.*

W Fitch del

Vincent Br

Plate 111.

ANGRÆCUM EBURNEUM.

Ivory Angræcum.

Gen. Char. Perianthium patens. *Sepala* et *petala* subæqualia, libera. *Labellum* sessile, cum basi columnæ continuum, carnosum, indivisum, petalis multo latius; *calcare* recto, cornuto, sæpius subcylindraceo perianthio multo longiore, raro obconico. *Columna* nana, subteres, raro elongata semiteres. *Anthera* bilocularis, truncata. *Pollinia* 2, bipartibilia; *caudiculâ* brevi, angustatâ; *glandulâ* triangulari.—Epiphytæ *caulescentes.* Folia *coriacea, ligulata, apice obliqua.* Flores *solitarii v. racemosi, albi, nunc citrini vel herbacei. Lindl.*

Angræcum *eburneum;* caule simplici, foliis coriaceis lucidis apice obliquis 7–10-striatis, spicis multifloris secundis, labello cordato subrotundo cuspidato basi jugo elevato cristato, calcare sepalo supremo parallelo et dimidio longiore, ovario scabro.

Angræcum eburneum. *Thouars, Orchid. Afr. t.* 65. *Achill. Richard, Orchid. Maurit. p.* 71. *Lindl. Bot. Reg. t.* 1522. *Gen. et Sp. Orchid. p.* 245. *Ellis's Madagascar passim.*

Limodorum eburneum. *Bory, Voy. v.* 1. *p.* 359. *t.* 19. *Willd. Sp. Pl. v.* 4. *p.* 125.

Angræcum superbum. *Thouars, Orchid. Afr. tt.* 62, 63, 64. *Lindl. Gen. et Sp. Orchid. p.* 245.

Aerobion superbum. *Spreng. Syst. Veget. v.* 3. *p.* 716.

It is not possible to render justice to this noble Orchideous plant on a quarto page. All that can be done is to give a reduced figure of the entire plant, and a portion of a leaf and of a spike of flowers of the natural size, as they appear at Kew, where the plant—which once formed a portion of the collection of the late Mr. Clowes—flowers freely during the winter months, continuing long in beauty. The species is a native of Madagascar and Bourbon, and is yet comparatively rare. The first plant was imported by the Horticultural Society from the former island, through their Collector, Mr. Forbes. The flowers have unfortunately neither colour nor fragrance. It is found growing in conjunction with *A. sesquipedale*—as may be seen in the beautiful illustrations to Mr. Ellis's work on Madagascar—and, like that species, requires a strong heat.

Descr. Our *plant* is about two feet high; the *stem*, except the very base of it, is clothed with large, sheathing, coriaceous, shining, distichous, striated *leaves*, two inches broad, singularly oblique at the apex, carinate in the lower half. From between the lower leaves many stout radicles descend from the stem. *Peduncle* arising from near

the base of the stem, jointed, sheathed with scales, bearing a *spike* of very large green and white *flowers*, which overtops the longest leaves. These *flowers* are distichous rather than secund, and are placed alternately back to back, with the apices of their labella all pointing one way. *Sepals* and *petals* very much spreading, green, lanceolate. *Labellum* very large, broadly cordate, ivory-white, thick and fleshy in texture, concave in the centre, and bearing there an elevated cleft ridge; the apex is suddenly but shortly acuminated. *Column* very short, thick, greenish-white, bearing a hemispherical anther, firmly attached to its clinandrium.* *Pollen-masses* two, bipartite, yellow, broad, cuneate, waxy, approximate, with a narrow *caudicle* arising from a large, canaliculate, triangular *gland*. *Stigma* quite sunk in a hollow, and concealed beneath the clinandrium.

The Plate represents an entire plant, on a very reduced scale, the apex of a leaf, and the chief portion of a spike:—*nat. size*. Fig. 2. Pollen-masses:—*magnified*.

* Dr. Lindley observes on this structure, and that of the concealed stigma, "This plant offers a striking instance of the precaution which Nature seems to have taken, to prevent direct contact between the pollen and the stigmatic surface, and at the same time of the skilful means by which an indirect communication is substituted, so that no impediment may in reality exist to the process of fertilization, notwithstanding the apparent obstacles to its taking effect. The pollen is locked up in an anther, so firmly united to the top of the column, that nothing but actual force can remove it; while the stigma is situated upon the face of the column, far beyond the reach of contact with the pollen. To establish the requisite communication, a narrow slip of the top of the column, proceeding from the edge of the stigma to beneath the anther, gradually separates from the surrounding tissue: the face of the anther opens along the middle of the cells, contracts, and allows the pollen-masses to glue themselves to the narrow slip, which is the caudicula; at the same time, while this operation has been in progress, a triangular portion of the front of the edge of the stigma has been adhering to the caudicula, and thus establishes the direct communication which is required, afterwards separating, with the caudicula, under the form of the gland."

Pl. 112

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 112.

EPIDENDRUM DICHROMUM, *var.* AMABILE.

Beautiful Variety of the Two-coloured Epidendrum.

Gen. Char. Sepala patentia, subæqualia, lateralibus basi haud productis. *Petala* nunc conformia et æqualia, nunc diversissima. *Labellum* unguiculatum, cum columna parallelum et omnino v. parte connatum: limbo integro v. diviso, basi sæpius callo duplici, costa v. tuberculo nunc interjectis instructo; nunc verisimiliter in calcar productum, pedicello immersum ideoque columnæ cuniculum formans. *Columella* elongata, *clinandrio* marginato sæpe fimbriato, semiteres ecornis, basi sæpius canaliculata. *Pollinia* 4, coriacea, æqualia, compressa; *caudiculis* totidem replicatis; *glandulâ* liberâ nullâ. *Anthera* carnosa, 2–4-locularis.—Herbæ *epiphytæ* Americæ calidioris, *nunc terrestres.* Caulis *nunc pseudobulbosus nunc elongatus, foliosus.* Folia *carnosa rarissime venis elevatis striata.* Flores *solitarii, spicati, racemosi, corymbosi, vel paniculati, terminales vel laterales, sæpius siccati coriacei,* raphibus *farcti. Lindl.*

Epidendrum *dichromum;* pseudobulbis ovato-fusiformibus 2- vel 3-phyllis, foliis rigidis ligulatis planis obtusis scapo paniculato multifloro brevioribus, sepalis lineari-lanceolatis acutiusculis petalis obovato-lanceolatis duplo latioribus, labelli profunde trilobi lobo medio obcordato pluriès costato lateralibus brevioribus rotundatis apice patulis, columnâ obtuse auriculatâ.

Epidendrum dichromum. *Lindl. Fol. Orch., et in Bot. Reg.* 1843, *Misc.* 119.

This charming *Epidendrum* was imported last year from Bahia by Messrs. Hugh Low and Co., of the Clapton Nursery, through whom it speedily found its way into all the principal collections in the neighbourhood of London. In many of these it has already flowered, and I was myself fortunate enough to see it in bloom last autumn (1864) in Mr. Bassett's garden, as well as at the establishments of Mr. Williams, of Holloway, and of Messrs. Lee, of Hammersmith. In each case the variety was different, the sepals and petals in Mr. Bassett's plant being of a pale rose-colour, in that of Mr. Williams they were nearly white, while in Messrs. Lee's specimen—from which the figure is derived—both tints were combined with such pleasing effect as to merit the distinctive appellation of '*amabile*' which I have ventured to add to the specific name.

Mr. Low's collector found the plant in exposed places on the margin of rivers, establishing itself on the branches of low straggling bushes, and sending its roots down into the sand amidst which they grew. Taking their cue from these peculiarities in its habit in a wild state, some cultivators have attempted to grow the species potted in sand, but it seems to succeed much better upon a block of wood or in a pot nearly filled with potsherds. It will bear exposure to the light, and, while growing, must have a good amount of heat.

When I first examined the plant I thought it was probably new, but I am now satisfied that Professor Reichenbach was right in referring it to the *E. dichromum* of Lindley, in despite of some minor discrepancies, for which its tendency to run into varieties may readily account.

The species of *Epidendrum* are not usually popular with cultivators, few of them possessing much brilliancy of colour; but the present subject is a notable exception—rivalling, as it does, the best of the *Barkerias*—and there are others of equal or greater beauty still to introduce. Among the latter I would specially instance *E. erubescens*, which produces a panicle nearly four times the size of the one represented in the Plate, and with flowers of a similar hue. It is a native of Oaxaca, whence living specimens were imported more than twenty years ago; they all, however, died because they were kept too warm. Surely an attempt ought to be made to re-introduce so desirable a plant, which we should now be able to manage with perfect ease.*

Descr. *Pseudobulbs* clustered, from three to six inches long, smooth, round, ovate-oblong. *Leaves* two or three on each bulb, strap-shaped, from six inches to a foot or more in length, rather blunt at the ends, erect, and rigid. *Scape*, in the wild specimens, three feet high or more, bearing a many-flowered panicle. The *flowers* vary both in their size and tints, some being as large and as brilliantly rose-coloured as the specimens represented in the Plate, while others are almost entirely white, and considerably smaller. *Sepals* about an inch long, linear-lanceolate, rather sharp at the ends; *petals* wider than the sepals, and obovate. *Lip* deeply three-lobed, the middle lobe obcordate, with many ribs on its disk, of a beautiful deep crimson, with light margin; the lateral lobes are shorter, spreading at the ends, white, externally turned up with purple. *Column* as long as the lateral lobes of the lip, bearing two short blunt wings.

Fig. 1. Lip. 2. Column. 3. Pollen-masses:—*all slightly magnified.*

* I rejoice to say that a parcel of this beautiful plant was received in first-rate condition from Mexico this spring (1866), and sold at Stevens's Rooms, though not under the name of '*erubescens*,' its identity not having been known at the time. Like other Orchids from the more temperate regions of Mexico, it may probably require to be kept rather *drier* than the "cool" Orchids of New Granada and Peru. It will no doubt succeed best on a block either of wood or earthenware.

W. Fitch, del.

Vincent Brooks, Imp.

Plate 113.

ADA AURANTIACA.

Deep Orange-flowered Ada.

Gen. Char. Perianthium clausum, apice patulum. *Sepala* subæqualia, acuminata; lateralibus basi paulo obliquis. *Petala* conformia, breviora. *Labellum* elongatum, indivisum, columna parallelum, eique basi adnatum; lamellis duobus membranaceis in appendicem linearem truncatum connatis. *Pollinia* 2, cereacea, postice sulcata; *caudiculâ* brevi, obovatâ; *glandulâ* circulari. *Anthera* Oncidii, ecristata.—Herba *epiphyta, Americæ tropicæ, habitu omnino* Brassiæ *cujusdam glumaceæ*. Scapus *bisquamatus*. Spica *cylindracea, simplex*, bracteis *membranaceis*. Flores *xanthini*. *Lindl.*

Ada *aurantiaca;* foliis canaliculatis, scapo longiore bisquamato, bracteis cucullatis membranaceis ovariis sessilibus multo longioribus, floribus apice tantum patulis, sepalis petalisque lineari-lanceolatis acuminatis, labello lineari-lanceolato acutissimo convexo columnæ elongatæ basi adnato, lamellis membranaceis connatis apice truncatis acutis basi intus pubescentibus. *Lindl.*

Ada aurantiaca. *Lindl. Fol. Orchid.*

This very rare Orchidaceous plant flowered—for the first time in this country—at Knypersley in January, 1864. It is a native of New Granada, and was discovered in the Pamplona, at the height of 8500 feet above the level of the sea, by Mr. Schlim, and has been hitherto only known by the description given by Dr. Lindley in the 'Folia Orchidacea.' It is there recognized as a new genus, "differing from *Brassia* in some important particulars:—1, the lamellæ of the lip are confluent and membranaceous; 2, the lip is parallel with the column, and solidly united to the base of it; 3, the column is twice as long as in other *Brassias*, and thin-edged at the base; 4, the caudicle is short and obovate, while the gland is circular." It is a 'cool' Orchid, readily grown (in a pot), and flowers freely at different seasons of the year.

Descr. Epiphytal. *Pseudobulbs* about four inches long, subcylindrical, tapering upwards, bearing one to three broad linear *leaves* at the extremity, four to six inches long, and, at their base, partially sheathed with reddish-brown mottled *scales*. *Scape* terminal, drooping, eight to ten inches long, bracteated. *Spike* oblong, pendent, in our specimen bearing about ten subdistichous rather distantly placed *flowers* of a golden-orange colour. *Ovaries* elongated, clavate, with a scariose lanceolato-subulate *bract* at the base. *Perianth* spreading only from above the middle; the *sepals* lanceolate, much acuminate; *petals* resembling them, but smaller. *Lip* scarcely half the length of the perianth, broadly lanceolate, shortly acuminate, crested with a grooved membrane of

the same shape, nearly the length of the lip, its margins irregularly toothed near the middle. *Column* short, thick, concave near the base in front. *Anther-case* small, hemispherical. *Pollen-masses* two, obovate, seated on a cuneate *caudicle* which arises from a gland. (Some slight differences will appear between our description and the characters as given by Dr. Lindley, arising probably from the fact of Dr. Lindley having only a dried specimen to consult.)

Fig. 1. Flower slightly magnified. 2. Side view of column and lip. 3. The same, the lip seen from above. 4. Front view of the column. 5. Pollen-masses:—*magnified.*

W Fitch, del.

Vincent Brooks, Imp.

Plate 114.

PHALENOPSIS AMABILIS, *var.* GRANDIFLORA.

Large-flowered Indian Butterfly-plant.

Gen. Char. Perianthium explanatum, patens, sepalis liberis, petalis majoribus dilatatis. *Labellum* cum basi paulo productâ columnæ connatum, liberum, basi callosum, trilobum; lobis lateralibus ascendentibus petaloideis, intermedio angustiore bicirrhoso. *Columna* in ovarium recumbens, semiteres; rostello gladiato. *Anthera* bilocularis. *Pollinia* 2, subglobosa, *caudiculâ* planâ spathulatâ, *glandulâ* maximâ cordatâ.—Herbæ *epiphytæ*. Caules *radicantes, simplices*. Folia *rigida, lato-lanceolata, apice oblique retusa*. Flores *paniculati. Lindl.*

Phalenopsis *amabilis*, var. *grandiflora;* foliis longis, sepalis lateralibus internum phyllum supremum non tegentibus apice mucronatis, labello phyllis lateralibus externis multo breviori, lobo medio lineari-hastato, lobis lateralibus oblique cuneatis obtusangulis, cirrhis flavis. *Lindl.*

Phalenopsis grandiflora. *Lindl. in Gard. Chron.* 1848, *p.* 39, *with a woodcut of the flower. Walp. Ann. Bot. v.* 3. *p.* 561.

At the time when he published the first representation of this superb plant, Dr. Lindley was of opinion that it was specifically distinct from *P. amabilis*, and he gave it accordingly the name of *grandiflora*, in allusion to the magnitude of its blossoms, which are sometimes four inches in expansion. Of late years, however, Messrs. Low and other firms have imported innumerable varieties from Borneo and elsewhere, which run into each other in so many ways as to preclude the possibility of any longer regarding *P. amabilis* and *P. grandiflora* as truly distinct forms; the latter will therefore have to be merged in the older name.

Not only do the flowers themselves vary as to size and tinting, but the leaves also differ considerably both in form and colour, being sometimes found long and sharp-pointed, and of a uniform green, while at other times they are short and blunt, with a purplish tinge, especially on the under-side. All the varieties are easily grown in a strong moist heat, but they should be hung up near the glass, be fixed in shallow open pans or baskets (so that their roots may pass freely into the air), and not be allowed to exhaust themselves by over-flowering.

Fig. 1. Lip,—*magnified.*

W. Fitch, del.

Vincent Brooks, Imp.

Plate 115.

TRICHOPILIA CRISPA.

Crisp-lipped Trichopilia.

Gen. Char. Sepala et *petala* æqualia, patentia, angusta. *Labellum* magnum, petaloideum, convolutum, cum columnâ parallelum, trilobum, lobo intermedio subbilobo planiusculo, intus nudum. *Columna* teres, clavata. *Clinandrium* cucullatum, trilobum, villoso-fimbriatum. *Anthera* unilocularis, compressa, antice convexa. *Pollinia* 2, postice sulcata, *caudiculæ* tenui cuneatæ adhærentia: *glandula* minima.—Pseudobulbi *carnosi*, vaginis *maculatis supertecti, monophylli, coriacei.* Scapi *axillares*, 1–3-*flori. Lindl.*

Trichopilia *crispa;* pseudobulbis ovatis compressis vix sulcatis, monophyllis, foliis planis lato-lanceolatis acuminatis recurvis, pedunculis 2–3-floris, sepalis petalisque subæqualibus linearibus lanceolatis acutis margine undulato, labello longiore trilobo, lobis lateralibus rotundatis convolutis intermedio dilatato, bifido; columnæ cucullo trilobo, laciniis omnibus fimbriatis.

Trichopilia crispa. *Warner's Select Orchidaceous Plants, Pl. V.*

Trichopilia coccinea. *Hooker in Bot. Mag. t.* 4857, *nec Lindley.*

This is the handsomest of the Trichopilias. Its blossoms are larger and more highly-coloured than those of *T. coccinea*—with which it is sometimes confounded—while its scapes are three-flowered like those of *T. suavis*, and they are so freely produced as to surround the pot in which the plant is grown with what looks like a rich and beautiful frill. It succeeds perfectly under the treatment ordinarily given to its family, but flowers somewhat later in the season, the month of June being its usual time.

It was introduced a few years since from Central America by Mr. Warner, in whose 'Select Orchidaceous Plants' it is well figured. Mr. Rucker's collection furnished the specimens from which the Plate is taken.

Descr. *Pseudobulbs* two or three inches long, broadly ovate, slightly furrowed, one-leaved. *Leaves* broadly lanceolate, bent backwards, acuminate, about a span long. *Flower-scapes* about six inches long, bearing two or three large and beautiful *flowers*, which, when expanded, measure fully five inches across. *Sepals* and *petals* nearly equal, linear-lanceolate, acute, waved at the margin, but not twisted; they are of a port-wine red, with frequently a narrow border of white. *Lip* externally white, internally of a rich rosy-crimson; it is funnel-shaped, and three-lobed, the side lobes being rounded

and folded over each other; the middle lobe is larger, and much spread out, curled and waved at the margin, and cleft at the apex. Hood of *column* three-lobed, the divisions being nearly equal, and all of them fringed.

Fig. 1. Column. 2. Pollen-masses :—*magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 116.

ACROPERA ARMENIACA.

Apricot-coloured Acropera.

Gen. Char. Sepala patentia, supremum galeatum, lateralia divaricata. *Petala* nana, obliqua, apice truncata, subpatentia. *Labellum* unguiculatum, cum basi columnæ elastice articulatum, trilobum, lobo intermedio minore saccato. *Columna* erecta, marginata, basi saccata. *Pollinia* 2, linearia, convoluta, caudiculâ lineari-subulatâ, glandulâ minutâ. *Rostellum* subulatum.—Epiphytæ, *racemis cernuis multifloris, vegetatione* Maxillariæ. *Lindl.*

Acropera *armeniaca ;* racemo laxo multifloro, sepalis apiculatis lateralibus obliquis apice rotundatis, petalis liberis columnâ duplo brevioribus, labello calceato carnoso apice libere ovato plano acuminato intus pone basin cristâ tuberculatâ aucto. *Lindl. l. c.*

Acropera armeniaca. *Lindl. in Paxt. Flow. Gard. cum xylo. v.* 1. *p.* 140.

Although introduced to our collections about the year 1850, no coloured representation of this beautiful plant—which is by far the most ornamental species of the singular genus to which it belongs—had appeared up to the present year (1865). It was discovered by Warszewicz in Nicaragua, and was probably distributed under the hammer of Mr. Stevens soon after its arrival in this country, but it is still exceedingly rare. Indeed, but for the care bestowed upon the plant at Oulton Park, where it originally flowered, and from whence, through the kindness of Sir Philip Egerton, my own specimens were derived, it would in all probability ere this have been lost to our gardens. Nothing can be simpler than its cultivation, but it requires a pot and a fair amount of heat, and, being a rapid grower, it should be broken up, like the *Gongoras* and *Stanhopeas*, every second or third year. It flowers abundantly during the summer months. There is a great family likeness among the Acroperas, and therefore, although botanically distinct, it is not desirable to attempt to cultivate them all. Where a selection is made, *A. Batemanni* and *A. armeniaca* are decidedly the best, and of these two the last is brighter in its colouring, and larger and handsomer in all its parts.

Fig. 1. Side view of a flower. 2. Front view of a column. 3. Front view of the labellum :—*magnified.*

W. Fitch, del.

Vincent Brooks, Imp.

Plate 117.

PAPHINIA CRISTATA.

Crested Paphinia.

Gen. Char. Flores subregulares, expansi petaloidei, parum in mentum producti. *Labellum* parvum, unguiculatum, tripartitum, glandulis filiformibus apice alibique obsitum. *Columna* clavata, elongata, semiteres, apice auriculata. *Pollinia* 4, per paria caudiculæ elongatæ apice setaceæ affixa, *glandula* minuta subtriangulari; rostello subulato.—Herbæ *pseudobulbosa, scapo pendulo pauciflоro. Lindl.*

Paphinia *cristata;* pseudobulbis ovatis sulcatis mono-triphyllis, foliis oblongo-lanceolatis plicatis, scapo pendulo bifloro squamis laxiusculis vaginato, floribus explanatis, sepalis petalisque lanceolatis acutis æqualibus, labello multo minore tripartito carnoso, laciniis lateralibus falcatis intermedia rotundata cristato-fimbriata utrinque unidentata, ungue subcristato disco bidentato. *Lindl.*

Paphinia cristata. *Lindl. in Bot. Reg.* 1843. *Miscell. p.* 14.

Maxillaria cristata. *Lindl. in Bot. Reg. t.* 1811.

A very curious and really handsome Orchideous plant, native of Trinidad and New Granada, first published by Dr. Lindley as a *Maxillaria*, and then very justly raised by him to the rank of a new genus.* It flowers freely in the Orchideous stove in August, requiring considerable heat and moisture, and should always be kept in a pot. Unfortunately, its splendid flowers are very fleeting.

Descr. *Pseudobulbs* clustered, oblong-ovate, compressed, moderately furrowed; one of the old bulbs is terminated by two leaves; the younger one with three, besides leafy scales at the base: these *leaves* are four to six inches long, lanceolate, patent, submembranaceous, plicate. *Peduncles* solitary, single or two-flowered, pendent, emerging from the base of a pseudobulb, jointed and sheathed with loose, brown, membranaceous scales. *Sepals* and *petals* alike in shape, the latter smaller, all of them patent, lanceolate, fleshy, having a white ground, variously streaked, and blotched, and spotted with dark chocolate-brown: the intermediate less covered with brown, and with more regular transverse bands. *Lip* very curious in form, almost entirely of a rich chocolate-purple colour, very much smaller than the petals or sepals, somewhat ovate in circumscription, shortly unguiculate, thick and fleshy, deeply two-lobed; two lateral lobes

* *P. tigrina* is a second species, and I have no doubt that the so-called *Cycnoches barbatum* will be found to form a third, under the name of *P. barbata.*

oblong, acute, subacinaciform; middle lobe rhomboidal (*i. e.* with an angle or tooth on each side), terminated at the apex with a *crest*, consisting of a tuft or pencil of club-shaped, downy, white fimbriæ; the disk is curiously crested, and there are four long-pedicellated glands on the claw. *Column* yellow-green, banded with chocolate near the base, club-shaped, semiterete, with a large projecting tooth on each side below the anther: between which teeth, in front, is the very long, prominent *rostellum*. *Anther-case* hemispherical. *Pollen-masses* obovate, from a long *caudicle; gland* small, triangular.

Fig. 1. Column and anther. 2. Pollen-masses. 3. Labellum. 4. Fimbria from the apex of the labellum :—*magnified*.

W. Fitch, del.

Vincent Brooks, Imp.

Plate 118.

MAXILLARIA VENUSTA.

Graceful Maxillaria.

Gen. Char. Perianthium connivens, raro patens. *Sepala* lateralia cum basi productâ columnæ connata. *Petala* subconformia. *Labellum* trilobum, cucullatum, sessile, cum basi productâ columnæ articulatum. *Columna* semiteres, aptera. *Anthera* subbilocularis. *Pollinia* 2, bipartibilia v. integra, *caudiculâ* brevi, *glandulâ* transversâ.—Epiphytæ (*Americanæ*) *pseudobulbosæ, acaules vel caulescentes.* Folia *plicata v. coriacea.* Pedunculi *radicales axillares vel terminales, uni- v. multiflori. Lindl.*

Maxillaria *venusta;* pseudobulbis oblongis compressis lævibus viridibus 2-phyllis, foliis oblongo-lanceolatis brevi-acuminatis subcoriaceis lævibus inferne longe attenuatis, pedunculis radicalibus intense rubris vaginato-bracteatis unifloris folio brevioribus, flore subnutante amplo, sepalis petalisque patentibus lanceolatis longe acuminatis albis, petalis lateralibus majoribus basi latioribus sublonge productis, labello perianthio multo breviori cum columnâ prolongatâ articulato trilobo, disco callo rotundato tomentoso, lobis subæqualibus, intermedio ovato obtuso, luteo, lateralibus valde obtusis albis rubro-marginatis, subtus maculis duabus rotundatis rubris.

Maxillaria venusta. *"Reich. fil. Orchid. Schlimmianæ" in Bonplandia,* 1854, *p.* 277. *Pescatorea, t.* 38.

This charming plant was communicated for publication in the 'Botanical Magazine' by Mr. Tucker, gardener to G. Reed, Esq., of Burnham, Somerset, in whose stove it flowered in great beauty in October, 1861. It is a native of Ocaña, at an altitude of 5–6000 feet above the sea-level, and therefore requires 'cool' treatment, under which it succeeds admirably, producing throughout the year a succession of blossoms which—in addition to their other attractions—are deliciously sweet, rivalling and resembling the odour of *Gardenia radicans.*

Fig. 1. Column and labellum, with the upper part of the ovary. 2. Pollen-masses:—*magnified.*

W. Fitch, del.

Vincent Brooks, Imp.

Plate 119.

CATTLEYA ACLANDIÆ.

Lady Acland's Cattleya.

Gen. Char. Sepala membranacea vel carnosa, patentia, æqualia. *Petala* sæpius majora. *Labellum* cucullatum, columnam involvens, trilobum vel indivisum. *Columna* clavata, elongata, semiteres, marginata, cum labello articulata. *Anthera* carnosa, 4-locularis, septorum marginibus membranaceis. *Pollinia* 4, caudiculis totidem replicatis.—Herbæ *epiphytæ (Americanæ) pseudobulbosæ.* Folia *solitaria vel bina, coriacea.* Flores *terminales speciosissimi, sæpe e spathâ magnâ erumpentes. Lindl.*

Cattleya *Aclandiæ;* foliis ellipticis, floribus binis, sepalis petalisque herbaceis obovato-lanceolatis æqualibus undulatis purpureo-maculatis, labelli plani calvi hypochilio dilatato paulo subrepando epichilio orbiculari reniformi emarginato. *Lindl.*

Cattleya Aclandiæ. *Lindl. Bot. Reg. v.* 26. *t.* 48. *Paxt. Mag. of Bot. v.* 9. *t.* 1. *Fl. des Serres, v.* 7. *t.* 674.

One of the handsomest of a very handsome genus, distinguished by Dr. Lindley with the name of the late lamented Lady Acland, of Killerton, Devon, by whom the plant was first introduced from Brazil, and from a drawing by her Ladyship the figure in the 'Botanical Register' was engraved. Since then living plants were sent to Kew from Bahia through the kindness of J. Wetherall, Esq., her B. M. Consul at Paraiba, Brazil. The flowers are charmingly varied in colour, and the structure of the labellum departs from the usual form, constituting (with *Cattleya bicolor*) a distinct section of the genus, distinguished by the base of the lip being too narrow and too spreading to cover the column. It flowers in the early summer months, and requires the same treatment that is ordinarily given to Cattleyas.

Descr. *Pseudobulbs* cauliform, terete, jointed, four to five inches long, striated, branched at the base, and sheathed with membranaceous *spathes* at the joints. *Leaves* two, terminal, elliptical, obtuse, thick and fleshy. From the centre of this pair of leaves the peduncle appears, bearing two large very handsome *flowers. Sepals* and *petals* uniform, spreading, two to two and a quarter inches long, obovato-lanceolate, firm, fleshy, yellow-green, strongly spotted and blotched with dark purple on the upper or anterior side, much less distinctly so at the back. *Lip* large, porrected, much larger than the petals or sepals, panduriform; the base narrow and spreading, with two lateral lobes so small that they do not include the column, as is usual in this genus; the lip

is still more contracted near the middle, whence it expands into the broad, kidney-shaped extremity, emarginate at the apex: the colour of the whole is pale purple, with darker veins, and a yellow line on the disk. *Column* parallel with the lip, and, as it were, applied to it, obovate, dark-purple, expanding into two wing-like margins. *Anther-case* sunk between two teeth or small lobes of the *clinandrium*. *Pollen-masses* as in the genus.

Fig. 1. Column. 2. Pollen-masses. 3. Lip:—*all more or less magnified.*

W.Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 120.

MASDEVALLIA TOVARENSIS.

The Tovar Masdevallia.

Gen. Char. Perigonii foliola exteriora in tubum connata, apice libero longe lingulata; *interiora* libera nana. *Labellum* cum *columnâ* articulatum, sessile, oblongum, concavum, nanum. *Columna* incurva, semiteres. *Anthera* bilocularis, terminalis, opercularis. *Pollinia* 2, integra, caudiculis duabus filiformibus, elastice replicatis, *glandulæ* conicæ affixa.—Herbæ *Peruvianæ, epiphytæ;* rhizomate *parvo repente;* foliis *oblongo-lanceolatis, basi in petiolum angustatis;* scapis *radicalibus unifloris;* floribus *majusculis. Endl.*

Masdevallia *Tovarensis;* foliis oblongis subspathulatis apice rotundatis obsolete tridentatis pedunculo ancipiti bifloro subæqualibus, bracteis membranaceis cucullatis, sepalis connatis, supremo anguste lanceolato in aristam longam producto, lateralibus ovatis multo ultra connatis dein liberis obtusis, aristâ brevi in apice, petalis oblongis subacutis incurvis, labello oblongo, medio margine utrinque emarginato acuto, nervis 3 prominulis lateralibus elevatis cristatis, androclinii margine dentato. *Reichenbach fil. quibusdam mutatis.*

Masdevallia Tovarensis. *Reich. fil. in Bonplandia, v.* 3. *p.* 24; *v.* 2. *p.* 23.

Masdevallia candida. *Klotzsch, Karsten.*

The genus Masdevallia was specially selected by Dr. Lindley, when announcing the preparation of his 'Folia Orchidacea,' to illustrate the astonishing progress that had been made in our knowledge of Orchids since the publication, a quarter of a century before, of his 'Genera and Species.' In the latter work only three Masdevallias were described, though the number had risen to nearly forty at the time above referred to, and it has been largely augmented since then. But however plentiful the Masdevallias in their native wilds, they have made their way slowly and reluctantly to the gardens of Europe, in which scarcely half-a-dozen—and these among the most insignificant of the race—have as yet produced flowers. The species, however, that is represented in the accompanying Plate will convey a more adequate notion of the ttractiveness of its family, and may well challenge the attention, not of the botanist merely, but of every cultivator of rare and beautiful plants.

Masdevallia Tovarensis, as its name implies, is a native of Tovar, in Columbia, where it was discovered at an elevation of several thousand feet, and sent to Germany many years ago, and it was from the latter country that Mr. Rucker received the plant from which, in November, 1865, the present figure was obtained. In Mr. Rucker's collection it passed under the name of *M. candida*, which, as Reichenbach has correctly pointed out, was erroneously given by the late Dr. Klotzsch to a plant that had already

been described as *M. Tovarensis*. To add to the confusion, there exists in the collection of Lady Dorothy Nevill a plant under the name of *M. Tovarensis*, which is altogether different from the species now described, and of which I hope to give some account at a future time.

Nearly all the Masdevallias may be classed among '*cool*,' and many of the species among the *very coolest* Orchids, being chiefly found at a great elevation on the Andes of New Granada and Peru. Nothing can be easier than their cultivation, if the conditions of low temperature and almost constant humidity to which they are accustomed in their native habitats, be duly imitated. It is hoped that collectors may be induced to make the introduction of a number of these lovely plants a special object, for a group of twenty or thirty kinds might be grown in a space that would be insufficient to accommodate a single specimen of some of the larger Orchids, and with nearly half the amount of heat. Among the species particularly worth searching for, I would notice *M. rosea*, that covers the slopes of the Popayan Alps with flowers larger than those of *M. candida*, and of the loveliest purple-rose colour; *M. racemosa*, from the same country, with spikes a foot long, of flowers larger than any Burlingtonia, and of the most vivid scarlet; and *M. elephanticeps*, from New Granada, with gold and purple blossoms six inches long, and the arrangement of which vindicates the propriety of the singular name given to it by Professor Reichenbach (in whose 'Xenia' it is admirably figured), for it offers an almost exact similitude to an elephant's head, with tusks and trunk complete!

Another species, *M. coccinea*, a worthy rival to the best of the above, is happily already among us in a living state, having been brought over in a cigar-box by Warszewicz, and thus saved from the risk of decay which delicate plants incur if huddled together with those that are more robust. A neglect of this precaution caused the death of many splendid masses of *M. elephanticeps* that were lately imported by Messrs. Low and others.

Descr. *Leaves* about a span long, oblong, somewhat spathulate, obscurely toothed at their extremities, nearly the same length as the upright two-edged *peduncle*. *Bracts* membranous, cucullate, enveloping the lower portion of the petiole. *Flowers* two on each peduncle, continuing long in perfection, and of the purest white. *Sepals*, as is usual in this genus, coalesce at the base, and form a sort of cup; the upper one lanceolate, and prolonged for an inch into a slender awn; the lateral sepals wider, and joined together much further than the upper one, and ending in short, slightly decurved awns. *Petals* oblong, slightly sharp-pointed, curved inwards about the length of the lip. *Lip* very small, oblong, acute, emarginate about the middle on either side, with three nerves down its centre, of which the two lateral ones are somewhat elevated.

Fig. 1. Side view of ovary, lip, and petals. 2. Side view of column. 3. Lip. 4. Pollen-masses:—*magnified*.

1.

2.

3.

4.

W. Fitch, del. et lith.

Vincent Brooks

Plate 121.

LISSOCHILUS HORSFALLII.

Mr. Horsfall's Lissochilus.

Gen. Char. Lissochilus, *R. Brown in Lindl. Coll. Bot. t.* 31. *Perianthium* explanatum. *Sepala* herbacea (vel brunnea), parva, reflexa vel patentia, libera. *Petala* maxima, patentia, alæformia. *Labellum* saccatum, concavum, subintegrum v. trilobum, cum basi columnæ sæpius connatum. *Columna* erecta, brevis, semiteres. *Anthera* bilocularis, cristata. *Pollinia* 2, postice biloba, caudicula lineari brevi, glandulâ triangulari. *Lindl. Gen. et Sp. p.* 191.

Lissochilus *Horsfallii;* foliis plicatis acutissimis scapo radicali exaltato multifloro duplo brevioribus, bracteis amplexicaulibus sessilibus acutis, sepalis æqualibus lanceolatis acuminatis undulatis retusis, petalis multo majoribus patentibus subquadratis obtusis, labello sublibero basi infundibuliformi obscure trilobo, lobis lateralibus maximis convexis ascendentibus rotundatis, epichilio ovato obtuso 3-costato, columnâ marginatâ, antherâ bidentatâ. *Bateman.*

For the opportunity of figuring this fine addition to the rare genus *Lissochilus* we are indebted to J. B. Horsfall, Esq., M.P., of Bellamour Hall, Staffordshire, to whom it was sent (in 1861) from the Old Calabar River, by Mr. S. Cheetham. It flowered in October last (1865) in Mr. Horsfall's collection, treated as a warm terrestrial Orchid. In habit and general appearance it bears some resemblance to the well-known *Phajus grandifolius* (*Bletia Tankervilliæ*), but the structure of the flowers is altogether different. Perhaps its nearest affinity is with another charming species of *Lissochilus*, *L. roseus*, also a West African plant, but which, it is much to be regretted, has long since disappeared from our collections. May we not hope that the evidence now afforded of the beauty of certain West African Orchids may lead to increased efforts for the introduction of additional species on the part of those who, like Mr. Horsfall, have at their command peculiar facilities for obtaining the natural productions of the countries in question? For even if it be true that a large proportion of the Orchids of intertropical Africa are unattractive, there are others—some of the *Angraca* for example—that are now as highly prized as any plants of their order. And to these many splendid additions would doubtless be made, could we but obtain a few collections from the Niger and other mighty streams that water the richest portions of the African continent. The head-waters of the Nile would also contribute their quota, for among the limited collection of specimens brought home by Captains Speke and Grant there exists a

remarkable *Angræcum* which in the length of its tails might vie with the well-known *A. caudatum*.

Descr. A terrestrial pseudobulbous plant, producing a tuft of several *leaves*, which are plicated, very sharp-pointed, and from two to three feet long by four to six inches broad. *Scape* radical, twice the length of the leaves, upright, bearing at its extremity a dense, many-flowered truss of large and beautiful flowers. *Bracts* long and pointed, fitting tightly round the scape. *Sepals* greenish on the outside, but of a purplish-brown internally, an inch long, lanceolate-acuminate, waved at the edges, bent backwards. *Petals* much wider than the sepals, spreading, obtuse, almost square, half the length of the ovary, white, suffused with rose. *Lip* nearly free, funnel-shaped at the base, slightly three-lobed; the lateral lobes very large, standing erect, convex, rounded, green, streaked with rich purplish-crimson. *Epichil*, or centre-lobe of lip, ovate, blunt, of a deep puce colour, with three whitish elevated ridges on its disk, and which run down to base of lip. *Column* short, half-round, with membranous edges. *Anthers* surmounted by a crest composed of two short diverging teeth.

Fig. 1. Reduced view of the entire plant. 2. Front view of the lip. 3. Column. 4. Pollen-masses:—*all slightly magnified.*

W. Fitch, del

Plate 122.

DENDROBIUM INFUNDIBULUM.

Funnel-lipped Dendrobium.

Gen. Char. (*Vide supra*, Plate 105.)

Dendrobium *infundibulum;* foliis lanceolatis angustis acutis, sepalis lineari-oblongis petalis oblongis obtusis triplo latioribus, mento infundibulari pedicello æquali, labello lobis lateralibus rotundatis integris, intermedio serrulato emarginato. *Lindl.*

Dendrobium infundibulum. *Lindl. in Linn. Soc. Trans. Batem. in Gard. Chron.* 1862, *p.* 1194.

The other day (November, 1863), while looking through the Nursery of Messrs. Low and Son, at Clapton, I was shown living plants and dried specimens of a *Dendrobium*, which had been recently imported by the firm from Moulmein, and to which they had given provisionally the name of *D. Moulmeinense*, under which designation it is already to be found in several collections. I thought the plant was undescribed, but on looking over Professor Lindley's 'Contributions to the Orchidology of India,' I at once recognized in that able botanist's description of *D. infundibulum* (transcribed above) the very plant that Messrs. Low had distributed under the name of *D. Moulmeinense*,* and which they have the honour of being the first to import alive. It is a species of surpassing beauty, and promises to more than rival its nearest relative, *D. formosum*. A dried flower that is now before me measures, when laid flat, four inches across; and that such glorious blossoms are produced in the greatest profusion is evidenced by the withered flower-stalks that crowd the tops of the imported stems.

The Rev. Mr. Parish, from whom Messrs. Low received the plant, found it flowering in February, upon the mountains of Moulmein, where it seems also to have been discovered in a former year, at the height of five thousand feet, by Mr. Lobb. Mr. Parish mentions that he had forty-four blossoms open at one time upon some plants that he kept in a small basket, and adds that they continued a very long time in perfection. I fear that here, as in the case of *D. barbatulum*, the form and size of the sepals are liable to considerable variation.

This plant, like all the other *Dendrobia* belonging to Dr. Lindley's nigro-hirsute section of the genus, is very impatient of stagnant moisture, although it can hardly have

* It seems probable that the plant that generally goes by this name is a permanent dwarf mountain variety, the lip of which is rather red than orange.—J. B. (1866).

too much water, provided the same passes freely away. To effect this, it should be placed in a pot filled with little else than broken potsherds mixed with some chopped sphagnum and a morsel of fibrous peat. It likes a good heat while growing.

Fig. 1. Column, spur, and ovary. 2. Pollen-masses. 3. Front view of the lip :—*magnified.*

Plate 123.

CYPRIPEDIUM HOOKERÆ.

Lady Hooker's Cypripedium.

Gen. Char. Perianthium patens. *Sepala* lateralia connata aut distincta, labello supposita. *Petala* libera, sæpius angustiora. *Labellum* inflatum, margine utrinque auriculato inflexo. *Columna* nana. *Stamina* 3, quorum unum sterile centrale dilatatum inflexum, et 2 fertilia lateralia; *antheræ* sub stamine sterili latentes, subrotundo-biloculares. *Pollen* pulverulento-glandulosum. *Stylus* subliber, teres, stigmate disciformi terminatus.—Herbæ *terrestres utrinque orbis, ab æquatore, fere ad circulum arcticum vigentes.* Folia *radicalia aut caulina, coriacea aut plicata.* Flores *solitarii racemosi v. paniculati, speciosi. Lindl.*

Cypripedium *Hookeræ;* foliis carnoso-coriaceis oblongo-ligulatis acutis tessellatis, pedunculo unifloro hirto, sepalo superiore triangulo ovato, sepalo inferiore oblongo obtuse acuto, sepalis ligulato-obovatis acutis limbo ciliatulis, labelli sacco cylindraceo galeato, margine libero medio integerrimo retuso latere utroque minute angulato, staminodio peltato magno oblongo, postice integerrimo, antice excisurâ semiovatâ bidentato, columnâ postice sub staminodio callo trilobo signatâ, lobo medio semiovato, lobis lateralibus teretiusculis divaricatis. *Reichenb. fil.*

Cypripedium Hookeræ. *Bot. Mag. t.* 5632.

This is another of those beautiful species of *Cypripedium* of which Wallich's *C. venustum* and *insigne* were the first (and long the only types known) in cultivation, but of which many striking new forms have of late been brought to this country from the islands of the East. For the present species we are indebted to Messrs. Low and Sons, of Clapton, who imported it from Borneo, and the specimen figured flowered in the garden of W. Marshall, Esq., of Enfield. Specimens were also sent at the same time to Dr. Reichenbach, fil., who has communicated to us the specific name he has given to it, with the further note: "Flowers of *Cypripedium hirsutissimum* and leaves of *Phalænopsis Schillerianum*, or nearly so." It partakes also of the characters of *C. barbatum* (Bot. Mag., tab. 4234) and *C. purpureum* (Bot. Mag., tab. 4901), from both of which it differs in the green and yellow dorsal sepal not striped with purple, and from the former also in wanting the bearded tubercles on the margins of the sepals; the latter character and the purple lip distinguish it from *C. venustum* (Bot. Mag., tab. 2129), as do the mottled leaves and very different dorsal sepal from *C. Fairieanum* (Bot. Mag., tab. 5024) and *C. insigne* (Bot. Mag., tab. 3412); whilst the straight, shorter, not decurved petals, and many other characters, remove it far from *C. Lowii* and *C. superbiens.* It is perhaps most nearly allied to *C. javanicum*, but that

has longer broadly linear blunt petals, green striped dorsal sepal, a green lip, and very pale foliage. From all the above our plant is further distinguished by its mottled foliage and broad, spathulate, diluted with purple, straight petals. It is one of the easiest of all the Cypripedia to grow.

DESCR. *Leaves* coriaceous, three to five inches long by one and a half to two inches in breadth, of a deep but bright green, mottled with transverse irregular pale fasciæ. *Scapes* purple, one-flowered in some specimens, and as well as the bract, ovary, and back of sepals and petals, covered with spreading glandular hairs. *Dorsal sepal* erect, about as long as the lip, yellowish, with a suffused green centre. *Petals* spreading, straight, ciliate, spathulate, acute, the narrower part undulate and green, with small purple spots, the dilated parts a dull purple. *Lip* dull brown-purple, suffused with green, the mouth transverse, with small purple spots on the inflexed margins. *Sterile stamens* nearly orbicular, notched above and below, the lobes purple, with pale margins.

Fig. 1. Apex of ovary and column,—*magnified*.

Vincent Brooks, Imp

Plate 124.

DENDROBIUM CHRYSOTOXUM.

Golden-arched Dendrobium.

Gen. Char. (*Vide supra*, Plate 105.)

Dendrobium (§ Dendrocoryne) *chrysotoxum;* pseudobulbis angustis multicostatis 2–4-foliis, foliis oblongis horizontalibus coriaceis, racemis lateralibus laxis gracilibus arcuatim decurvis pseudobulbos æquantibus, bracteâ basilari parvâ spathaceâ floralibus minimis herbaceis, sepalis petalisque explanatis oblongis obtusissimis planis bis duplo latioribus, labello indiviso cucullato rotundato pubescente margine minutissime pectinato et fimbriato. *Lindl.*

Dendrobium (§ Dendrocoryne) chrysotoxum. *Lindl. in Bot. Reg.* 1847, *sub t.* 19.

The *Dendrocoryne* section of the fine East Indian genus *Dendrobium* forms, Dr. Lindley observes, "a peculiar group, best perhaps characterized by their having a fleshy, angular stem, with two or more manifest articulations, one or more leaves at the upper end, and a lip not broken up into a tuft of hairs or fringes. They are, as it were, *Bolbophylla* passing into *Dendrobia*. In the group thus limited are included *D. densiflorum*, *Griffithii*, *aggregatum*, *tetragonum*, *Veitchianum*, *speciosum*, and some others formerly placed in *Desmotrichum*, a species whose lip is broken up into a brush."

The plant here figured is certainly not among the least handsome in this lovely group, and was imported from India by Messrs. Henderson. It flowers in the spring months, and is highly ornamental to the stove at that season. It requires the same treatment as *D. densiflora*, but usually comes into blow a week later than that species.

Descr. *Pseudobulbs* long, clustered, clavate or rather spindle-shaped, jointed, with elongated joints, and clothed with a compact, whitish, membranaceous sheath, having about four, more or less spreading, oblong, acute, coriaceous, dark-green *leaves* at the extremity. *Peduncle* lateral, arising from the top of the pseudobulb, just below the leaves, rather short, bearing a gracefully drooping *raceme* of twelve or more, large, golden-yellow *flowers;* almost a span long. There is a deciduous, scariose, sheathing *bract* at the base of the peduncle, and a very small one at the base of each ovary. The *flowers* are two inches across. *Sepals* and *petals* spreading; the former rather small, oval or oblong-oval; the latter broad-ovate, twice as large as the sepals, slightly twisted. *Lip* spreading, undivided, cucullate, the base contracted, having a prominent blunt *spur* behind, the lamina orbicular, pubescent on the upper surface, the margin most beauti-

fully fringed and ciliated: the colour of the lip is of the same deep bright-yellow as the rest of the flower, but the disc above is orange-colour, leaving a pale margin, and an arch or semicircle of very deep orange is seen at the base of the lamina, which suggested the specific name of the plant. *Column* short, with a broad blunt tooth on each side the anther-case.

Fig. 1. Column and anther. 2. Portion of the fringe of the lip,—*magnified*.

W. Fitch, del.

Vincent Brooks, Imp

Plate 125.

VANDA SUAVIS.

Fragrant Vanda.

Gen. Char. Sepala explanata, omnia basi æqualia et angustata, sæpius petaloidea. *Petala* sepalis conformia, sæpius basi torta. *Labellum* basi saccatum vel calcaratum, e basi columnæ apodæ continuum carnosum, sæpius sepalis multo brevius, subtrilobum aut integrum, ante calcar sæpius callosum auriculis nanis v. obsoletis. *Columna* crassa nana, libera, apoda; *clinandrio* verticali. *Stigma* transversum; *rostello* obtuso v. retuso. *Pollinia* cereacea, plano-convexa, geminata, v. 2 alte bipartita; *caudiculâ* loratâ aut cuneatâ, polliniis longiore; *glandulâ* magnâ, subrotundâ vel triangulari. *Anthera* ovata, bilocularis, valvulis semiliberis.—Herbæ *epiphytæ* Asiæ tropicæ. Folia *coriacea, disticha, apice obliqua.* Flores *sæpius racemosi, conspicui.* Pedunculi *laterales. Lindl.*

Vanda *suavis;* foliis loratis flaccide recurvis apice oblique dentatis, racemis laxis elongatis, sepalis petalisque spathulatis retrorsis convexis valde undulatis sublobatis apice rotundatis, labello convexo trilobo laciniâ mediâ angustâ alte bifidâ 3-costatâ lateralibus longis ovatis acutis patulis, auriculis erectis rotundatis. *Lindl.*

Vanda suavis. *Lindl. in Gard. Chron.* 1848, *p.* 351. *Paxton's Flower Garden, t.* 42. *f.* 3. *Reichenb. Xenia Orchid. v.* 1. *p.* 26. *t.* 12. *Lindl. Folia Orchid. part* 4. *p.* 5 (*excl. var. B* flava, *according to Reichenbach*).

An extremely lovely Orchideous plant, the flowers richly blotched and spotted with blood-purple on a pure white ground, so clear and distinct that they look as if they were made of porcelain. There are innumerable varieties, some of which have a good deal of brownish-yellow in their sepals and petals, and to these the name of *V. tricolor* is usually given. It is also nearly related to *V. insignis*, which, however, is in all probability distinct. It comes from Java and other of the East Indian isles, and is therefore of course fond of heat and moisture. If these be liberally supplied, the plant grows rapidly, and flowers abundantly at all seasons of the year.

Fig. 1. Column and lip, *magnified.*

W.Fitch.del.et lith.

Plate 126.

DENDROBIUM PARISHII.

Mr. Parish's Dendrodium.

Gen. Char. (*Vide supra*, Plate 105.)

Dendrobium *Parishii*; caulibus crassissimis subpendulis floriferis aphyllis membranulis albidis indutis, foliis coriaceis oblongo-lanceolatis obtusis erosis cito deciduis, floribus geminatis aut ternatis racemum spurium formantibus longe pedicellatis, sepalis oblongo-lanceolatis acutis, petalis paulo latioribus unguiculatis ovatis obtusiusculis pedicello duplo brevioribus, labello indiviso cucullato apiculato fere orbiculari, limbo et margine pulvinato. *Bateman*.

This new *Dendrobium* was sent (in 1862) from Moulmein by the Rev. C. S. P. Parish to Messrs. Hugh Low and Co., of the Clapton Nursery, in whose establishment, as also in the collections of Mr. Rucker and Mr. Day, it has flowered beautifully during the past season (1865). At first it appears to bear a certain amount of resemblance to *D. nobile*, but it is in reality perfectly distinct. Even when out of flower it is readily distinguished by its thick, clumsy, leafless stems, which are bent downwards in a stiff ungainly manner, while the stems of *D. nobile* and *D. moniliforme* hold themselves erect, and taper gracefully towards the base. The flowering-season of these latter species is likewise different, being confined to the winter months, whereas *D. Parishii* blossoms in summer.

A glance at the recent volumes of the 'Botanical Magazine' will show the large number of new and beautiful Orchids that have been secured to the collections of this country through the zeal and enterprise of Mr. Parish, whose eye seems to be ever ready to detect any new forms amid the striking vegetation of the rich country that is now the scene of his clerical labours. It is, however, among the Dendrobia that his most remarkable discoveries have been made, and there is therefore a peculiar pleasure in associating his name with a new species of the beautiful genus that owes so much to his diligent researches.

Descr. *Stems* a foot or more long, extremely thick throughout their whole length, bent downwards, covered, when young, with thin, white membranes, which fall off the second year. *Leaves* stiff and leathery, from two to four inches long, blunt and usually a little notched at the ends, falling off the first year. *Flowers* in twos or (more rarely) in threes, produced freely on a short spurious *raceme*, along more than half the entire

length of the stems. *Pedicels* nearly two inches long. *Sepals* half the length of the pedicels, oblong-lanceolate, acute, of a beautiful light rose-colour, except at the base, where the rose-colour fades into white. *Petals* same colour as the sepals, than which they are slightly broader, unguiculate, ovate, somewhat obtuse. *Lip* entire, shorter, than the sepals, and (when spread flat) nearly round, apiculate, hooded, downy in front and at the edges, with rich purple interior markings on either side the throat, and a lighter tint along its centre and at the recurved apex.

Fig. 1. Column. 2. Lip :—*magnified.*

W. Fitch, del.

Brooks Imp.

Plate 127.

WARSCEWIZELLA QUADRATA.

Square-disced Warscewizella.

Gen. Char. Perigonium carnoso-membranaceum, oblique insertum. *Labellum* brevissimè unguiculatum, subquadratum, lobatum, basi cucullato columnam amplectens, cæterum planiusculum, basi lamelliferum. Mentum modicum. *Columna* semiteres, foveâ triangulari angustâ sub rostello trilobo absconditâ, lobus rostelli medius prosiliens. *Anthera* depresso-mitrata, apiculata, valvis posticis persistentibus, bilocularis. *Pollinia* 2 depressa, oblonga, altè bipartita, in caudiculâ ligulatâ, apice hastatâ. *Glandula* rhombea. (*Character ex Reichenbach.*)

Warscewizella *quadrata;* labelli lobo medio orbiculari retuso lateralibus semiovatis conniventibus, appendice carnosa subquadrata sulcata apice obtuse tridentata. *Lindl.*

Warrea quadrata. *Lindl. in Gard. Chron.* 1853, *p.* 647. *Bot. Mag. t.* 4766.

? Warscewizella marginata. *Pescatorea.*

I confess that I cannot bring myself to believe that this plant is specifically distinct from the *W. velata*, figured at t. 5582 of the 'Botanical Magazine,' nor from the *W. marginata* of Reichenbach. I have however retained Dr. Lindley's name, which may serve to distinguish the plant as a well-marked *variety*, even if its claim to be regarded as a species should have eventually to be given up.

The specimen from which the figure was derived flowered in November 1853, with Messrs. Jackson, of Kingston, to whom is due the credit of having first discovered the value of *cool* treatment as applied to a numerous class of Orchids. Under this system all the Warscewizellas grow and flower freely, while on the contrary they always languish in a hot temperature.

The plant was introduced by Warszewicz from Central America.

Descr. *Pseudobulbs* none. From a few large, fleshy, fibrous *roots*, a cluster of *leaves* rises nearly erect, a span or more long, very obscurely veined, oblong, shortly but narrowly acuminated, plain or slightly carinate, jointed upon a narrowed but conduplicate base: there a few brownish scales at the base of these leaves. *Scapes* radical, from within the leaves, but shorter than the leaves, erect, with two or three sheathing scales at the base, bearing a single inclined or drooping, large, sweet-scented *flower*. *Sepals* white, or very pale greenish straw-colour, lanceolate; the lateral ones singularly reflexed and twisted. *Petals* of the same colour, ovato-lanceolate, recurved. *Lip* very

large, projecting, between orbicular and obovate, three-lobed, the lateral lobes ovate, obtuse, involute, middle lobe very broad retuse: the *colour* is white, with a broad purple margin, and a few purplish streaks on the disc. At the base is a large, shield-like, nearly square *disc*, radiated with a few furrows, and streaked with purple, the edge emarginate, with three obscure teeth at the apex. *Column* short, covered by the side-lobes of the labellum, white.

Fig. 1. Labellum. 2. Column. 3. Pollen-masses:—*magnified*.

W. Fitch del. et lith.

Vincent Brooks, Imp

Plate 128.

LÆLIA PRÆSTANS.

Admirable Lælia.

Gen. Char. Sepala explanata, lanceolata, æqualia. *Petala* majora, paulo difformia, carnosa, explanata. *Labellum* posticum, 3-partitum, lamellatum, circa columnam convolutum. *Columna* aptera, carnosa, antice canaliculata. *Anthera* opercularis. *Pollinia* 8, caudiculis 4 elasticis.—Herbæ *epiphytæ;* rhizomate *pseudobolbophoro.* Folia *carnosa.* Scapi *terminales, pauci- v. multi-flori.* Flores *speciosi, odorati. Lindl.*

Lælia *præstans;* pseudobulbis stipitatis fusiformibus costatis monophyllis, foliis oblongis acutis, floribus solitariis, bracteis squamæformibus abbreviatis, sepalis oblongis acutis, petalis multo latioribus ovato-oblongis obtuse acutis, labello libero trilobo circa columnam omnino convoluto carnoso, carinis 4 vel 6 per discum, columnâ crassâ superne dilatatâ, auriculis posticis apicularibus sibi incumbentibus. *Ex Reichenbach.*

Lælia præstans. *Reichen. fil. in Koch, Berlin. Allgem. Gartenzeitung,* 1857, *v.* 42. *p.* 336.

Lælia præstans. *Lindl. Gard. Chron.* 1859, *p.* 240.

Bletia præstans. *Reich. fil. Xenia Orch. t.* 114.

Cattleya pumila, *var.* major. *Lemaire, Illustration Horticole, v.* 6. 1859, *p.* 193.

At first sight this rare and beautiful plant might be mistaken for a large variety of another Lælia, with which we have been long familiar under the various names of *Cattleya pumila, C. marginata,* or *C. Pinelli,* but it is in reality perfectly distinct. Professor Reichenbach was the first to distinguish it, and he has given a most faithful representation in one of the Plates of his 'Xenia Orchidacea,' his specimens having been obtained from the rich collection of Consul Schiller, of Hamburg. In this country the plant is still extremely rare, and I am not aware of its having bloomed except in the collections of Mr. Day and Mr. Marshall. It was from a plant that flowered finely in the garden of the latter gentleman that the accompanying figure was prepared.

L. præstans comes from the island of St. Catherine, and should be treated like other Brazilian Lælias and Cattleyas from the same locality; but it prefers a block of hard wood to a pot, and it should always be placed near the glass. Its flowering season is November, and the blossoms are exceedingly durable.

Descr. *Pseudobulbous stems* rather club-shaped, three or four inches high, shorter than the leaves. *Leaves,* one on each stem, not more than six inches long, fleshy, oblong, sharp-pointed. *Peduncle* short, one-flowered. *Flowers* larger and more fleshy

than those of *L. pumila*, and more horizontally spread out. *Bracts* scale-like, short. *Sepals* oblong-acute, much narrower than the ovate-oblong *petals*, both being of a beautiful rosy-lilac. *Lip* free, three-lobed in front, wrapped entirely round the column, very stiff and fleshy, and incapable of being spread out flat unless forcibly bisected down the middle; along its disc run four or six elevated lines; externally it is almost of the same colour as the petals, but its throat is yellow, and its upper portion of a rich purple. *Column* thick and stout, spreading out above, and carrying two auricles, that rest upon each other.

Fig. 1. Column. 2, 3. Sections of the lip, showing the column :—*magnified*.

W. Fitch, del.

Plate 129.

DENDROBIUM CREPIDATUM.

Slippered Dendrobium.

Gen. Char. (*Vide supra*, Plate 105.)

Dendrobium *crepidatum;* caulibus elongatis erectis teretibus striatis, foliis oblongis acutis subcoriaceis, floribus geminis, sepalis oblongis obtusis, petalis orbiculari-oblongis, labello cordiformi-rotundato integro subsinuato obtuso retusove lateribus erectis intus pubescente venoso basi utrinque plicato, cornu brevi obtuso.

Dendrobium crepidatum. *Lindl. in Paxton's Fl. Gard. v.* 1; *Gleanings, n.* 99. *f.* 95 (*woodcut of flower only*).

This is a very lovely plant, recently (April 1857) communicated in a fine flowering state by Mr. Parker, of the Nursery, Hornsey. It is a native of India, probably of Assam or Khasya Hills, in Eastern Bengal. Dr. Lindley, in naming and defining it, as he has done in the work above quoted, takes the opportunity of mentioning its affinity with *D. Pierardi* and its allies; but it has a firmer texture in the sepals, petals, and labellum than any of these. He has since also alluded to a great resemblance with *D. cretaceum* (see Bot. Mag., tab. 4686), and like it the labellum in our plant is found to be emarginate or retuse at the point; but the flowers are much larger and more deeply tinged with pink and orange-yellow, wanting the cold chalky appearance of that species: the ovaries and pedicels too are longer and red It first bloomed with Mr. Holford in 1850. Like *D. Pierardi*, it flowers in early spring, and like that species requires a season of rest.

Descr. *Stems* six to eight inches to a foot and more long, firm, suberect, terete, striated, branching only at the very base, jointed, with the remains of a sheathing scale at the joints. *Leaves* few, and only upon the young and flowerless branches. *Flowers* large, white, tipped with blush, orange-yellow in the centre of the lip, arising from the joints of the naked (leafless) stems, generally in pairs. *Pedicels* and slender *ovaries* rather long, red. *Sepals* spreading, oblong, obtuse. *Petals* similar to them, but broader and subrotund, also spreading. *Lip* nearly cordate, contracted into a claw at the base, entire, scarcely, or but very obscurely, three-lobed, obtuse or retuse at the point, plaited on each side at the base, forming a slipper-like cavity: the inner or upper

surface is downy, except the disc, which is obscurely striated: the base externally forms a very obtuse *spur*. *Column* very short, decurrent to where it joins the labellum. *Anther-case* operculiform.

Fig. 1. Labellum. 2. Column. 3. Pollen-masses :—*magnified.*

W Fitch, del

Vincent Brooks, Imp

Plate 130.

SACCOLABIUM CURVIFOLIUM.

Curved-leaved Saccolabium.

Gen. Char. Perianthium explanatum, patens. *Sepala* petalis æqualia, lateralia sæpius majora. *Labellum* indivisum, calcaratum, basi columnæ accretum. *Columna* erecta, semiteres, rostello subulato. *Anthera* semibilocularis. *Pollinia* 2, subglobosa, *caudicula* elongata, *glandula* minuta. —Herbæ *epiphytæ, caulescentes.* Folia *disticha, coriacea, apice sæpius obliqua.* Flores *axillares, racemosi v. solitarii. Lindl.*

Saccolabium *curvifolium;* foliis arcuatis distichis imbricatis loratis canaliculatis apico obliquè præmorsis, racemis brevibus cylindraceis patentibus, bracteis minimis acutis, sepalis ovatis petalis obovatis, labelli calcare cylindraceo obtuso *laminâ lineari truncatâ. Lindl.*

Saccolabium miniatum. *Bot. Mag. t.* 5326, *haud Lindl.*

A native of Nepal, whence it has been introduced to our stoves by Messrs. Hugh Low and Co. and others. It is allied to the *S. miniatum* of Lindley, but is a far handsomer and more desirable species. The spikes of blossom appear in May, and continue a long time in perfection. It requires much heat and moisture in its cultivation.

Descr. The *stem* is short, about the thickness of the little finger; the lower portion is brown, zigzag, and clothed with the remains of old foliage, here and there sending out long solitary vermicular *fibres*, by means of which the plant is attached to the branches of trees. *Leaves* rather numerous, eight to ten inches long, loriform, coriaceous, canaliculate, bidentate at the apex, articulated below on a sheathing base. *Racemes* axillary, solitary, somewhat drooping, rather shorter than the leaves, bearing numerous richly-coloured *flowers*, each arising from a small, ovate, acuminated *bract*. *Ovary* linear, coloured. *Sepals* and *petals* spreading horizontally, ovate, acute, uniform in size and shape, fine red. *Lip* small, linear, recurved, with two upright teeth or lobes at its base, orange as well as the club-shaped *spur*, about as long as the flower. *Column* and *anther-case* scarlet.

Fig. 1. Flower from which the sepals and petals have been removed, showing the lip, spur, and column. 2. Front view of the column and anther. 3. Pollen-masses:—*all magnified.*

W Fitch, del.

Plate 131.

CATTLEYA MAXIMA.

Largest Cattleya.

Gen. Char. (*Vide supra,* Plate 108.)

Cattleya *maxima;* pseudobulbis clavatis elongatis alte sulcatis, foliis subemarginatis basi sublatioribus, pedunculo 2–3-(pluri-)floro, spathâ ancipiti longiore, sepalis lanceolatis petaloideis subrecurvis, petalis pluries latioribus convexis undulatis reticulatim pictis, labello convoluto apice explanato oblongo subcrispato-lobato per axin lævissimo. *Lindl.*

Cattleya maxima. *Lindl. Gen. et Sp. Orchid. p.* 116. *Bot. Reg.* 1844, *sub t.* 5. *Journ. of the Hort. Soc. v.* 1. *Part I. p.* 64. *Bot. Reg.* 1846, *v.* 32. *t.* 1. *Bot. Mag. t.* 4902.

This very fine specimen was flowered in the autumn of 1855, by the late W. G. Farmer, Esq., of Nonsuch Park, Surrey. There cannot be the smallest doubt of its specific identity with *Cattleya maxima*, figured and described by Dr. Lindley from Hartweg's Plants, and which is a native of Guayaquil and Columbia. It evidently approaches both *C. Mossiæ* and *labiata* in many important particulars, its main peculiarities consisting in its long-channelled pseudobulbs, and its very convex wavy petals, which are quite different in appearance from the thin, nearly flat petals of *C. Mossiæ* and *labiata*, which are also considerably wider. Mr. Farmer's plant bore seven fully-formed flowers on the spike, the labellum was of a pale colour, almost white, with an orange-yellow streak on the disc, the latter being elegantly reticulated with purple veins. The sepals and petals are paler in colour than those figured by Dr. Lindley, and these again are much inferior both in size and colour to some specimens lately imported by Messrs. Backhouse from Peru, among which not a few had produced upwards of a dozen flowers on a scape.

Cattleya maxima requires rather less heat than the other members of the genus, but will scarcely succeed in what are called "cool-orchid houses." It usually makes two growths in a year, from one or both of which flowers are produced in October and November.

Descr. *Pseudobulbs* clustered, forming a terete or slightly compressed *stem*, a foot or more long, sheathed with long, membranaceous, striated *scales*, and terminated by a single, oblong, coriaceous *leaf*, eight or ten inches long, and from two to three broad.

Peduncle arising from a compressed membranous sheath. *Flowers* from three to twelve or more on the same panicle, extremely large and handsome. *Ovary* very long, clavate, pedicelliform. *Sepals* spreading, narrow, lanceolate, acuminate, even, pale rose-colour in some varieties, deep rose in others. *Petals* equally spreading, of the same colour, much broader than the sepals, waved. The *lip* is very large; lower part (or two lateral lobes) convolute into a tube: the central lobe is large and spreading, crisped at the mouth; the ground-colour of the tube is white; in the disc or centre is an orange-coloured streak, and from a deep rose-coloured line bordering that a number of branching lines of the same colour diverge towards the margin.

W Fitch.del.

Vincent Brooks Imp

Plate 132.

DENDROBIUM FARMERI.

Mr. Farmer's Dendrobium.

Gen. Char. (*Vide supra*, Plate 105.)

Dendrobium *Farmeri*; caulibus elongatis clavatis articulatis profunde sulcatis basi pseudobulbosis apice foliosis, foliis 2–4 ovatis coriaceis striatis, racemis lateralibus multifloris pendulis, bracteis parvis ovatis concavis, sepalis (albo-flavescentibus roseo-tinctis) late ovatis obtusis, petalis conformibus (ejusdemque coloris) majoribus, labello majore (pallide flavo disco luteo) rhomboideo obtusissimo unguiculato lato supra pubescente margine denticulato.

Dendrobium Farmeri. *Paxton, Mag. of Botany, v.* 15. *cum Ic. Bot. Mag. t.* 4659.

A most delicate and lovely *Dendrobium*, sent in 1847 by Dr. M'Clelland, from the Calcutta Botanic Garden, to the late W. G. Farmer, Esq., after whom it was named. Mr. Paxton observes, that "in habit and appearance the plant very much resembles *Dendrobium densiflorum*," "but the stems are more angular, and the flower-scape is less densely laden with bloom; the flowers, too, are altogether different." The flowers, however, are more different in colour than they are in shape; still there is no difficulty in distinguishing the species. It flowers freely in May, and requires the same treatment as *D. densiflorum* and other kinds with clavate stems.

Descr. *Stems* elongated club-shaped, jointed and deeply sulcated, growing in clusters; at the base they swell out into a kind of pseudobulb, scarcely so large as a hazel-nut. The young *stems* bear from two to four spreading, ovate, coriaceous or fleshy *leaves* at the top, acute, striated; the old stems throw out pendulous *racemes* from near the summit, which exceed the stems in length. *Flowers* numerous, but rather lax. *Bracteas* small, ovate, concave. *Sepals* very patent, broad, ovate, obtuse, pale straw-colour, delicately tinged with rose. *Petals* of the same colour and form, but larger, spreading. *Lip* moderately large, pale straw-colour, the whole disk orange-yellow, broadly rhomboid, very obtuse, downy above, the base contracted into a claw, and above the claw the margin is on both sides folded and sinuated; the base above bears an oblong flattened tubercle. *Column* very short, terminated by the obtusely conical anther-case: the lower part of the column is extended downwards, so as to form an obtuse spur to the labellum.

Fig. 1. Side view of a column, with anther-case and labellum. 2. Front view of a labellum:—*magnified.*

1.

W Fitch. del. et lith.

Vincent Brooks, Imp.

Plate 133.

PHALÆNOPSIS LÜDDEMANNIA.

M. Lüddemann's Phalænopsis.

Gen. Char. (*Vide supra,* Plate 114.)

Phalænopsis *Lüddemanniana,* aff. P. Sumatranæ, *Korth. et Rchb. fil.* (zebrinæ, *H. Bog.*) *et* P. violaceæ, *Teijsm. et Binn.;* sepalis oblongis acutis, petalis subminoribus, labello ab ungue lato tripartito, laciniis lateralibus ligulatis apice exciso bidentatis, extus oblique carinatis, erectis, laciniâ mediâ ab ungue angusto oblongâ ante apicem angulatâ seu serrulatâ, fornicatâ, apiculo sursum inflexo, squamulis seriatis in disco inter lacinias laterales, callis forcipatis duobus antepositis, carinâ serrulatâ in basi ac in apice laciniæ anticæ, pilis multis antice circumjectis, column utrinque supra basin angulatâ. *Reichenbach, fil.*

Phalænopsis Lüddemanniana. *Rchb. fil. in Gardeners' Chron., May,* 1865. *Bot. Mag. t.* 5523.

This beautiful plant is a native of the Philippines, whence it was sent to Messrs. Hugh Low and Co., of Clapton, who being unable to distinguish it in habit from the old *Phalænopsis equestris* (*P. rosea*), disposed of several plants of it to their customers under that name. Several of these flowered simultaneously this spring (1865), and no fewer than four of them were exhibited at the same time at one of the Tuesday meetings of the Royal Horticultural Society at South Kensington. These came from the collections of Mr. Day, Mr. Marshall, Dr. Patteson, and Messrs. Low; it has also appeared in that of Mr. Wentworth Buller. It is of the very easiest cultivation, but requires a good heat.

Professor Reichenbach, in his very interesting description of the plant (published in the 'Gardeners' Chronicle'), mentions the circumstance of its having been first flowered by M. Lüddemann, of Paris (formerly at the head of M. Pescatore's celebrated establishment), to whom the species was dedicated. Professor Reichenbach also observes that he has seen two varieties of this beautiful plant: one of them with the bars on the petals and sepals altogether cinnamon-colour, and to which he gives the name of "*ochracea;*" the other (as in the case of the specimen represented) with the lower bars of a fine amethyst tint which he calls "*delicata.*" Our drawing was taken from a specimen exhibited by Mr. Day.

Descr. *Leaves* polished and leathery, from four to six inches or more in length, undistinguishable from those of *Phalænopsis equestris* (*P. rosea*). *Flower-stem* very

short (for the genus) and few-flowered. *Sepals* and *petals* oblong-acute (the petals being slightly smaller than the petals), white at the margin, but marked with transverse bars, which are generally of an amethyst colour near the base and cinnamon in the upper parts. *Lip* three-lobed, the lateral portions being erect, ligulate, and deeply double-toothed, while the middle lobe is oblong, and near its apex (which is slightly bent inwards) angular and entire or in certain varieties somewhat serrulate; on the disk between the lateral partitions are a series of small scales, with two forceps-like appendages in front. The middle lobe of the lip is intense violet, but there are yellow blotches on the side lobes. *Column* white or violet, with an angular projection near the base on either side.

Fig. 1. Side-view of lip and column. 2. Front-view of ditto. 3. Pollen-masses:—*all somewhat magnified.*

W Fitch, del

Plate 134.

DENDROCHILUM GLUMACEUM.

Glumaceous Dendrochilum.

Gen. Char. Sepala et *petala* æqualia, libera, patentia. *Labellum* integerrimum, sepalis subconforme, basi concavum v. carinatum, nunc cristatum. *Columna* brevis, semiteres, antice processubus duobus cornua referentibus, apice dentata v. rostrata. *Pollinia* 4, libera ($\frac{oo}{oo}$), incumbentia.—Herbæ *supra arbores vigentes,* foliis *coriaceis in pseudobulbis sæpius solitariis.* Spicæ *terminales aut laterales, filiformes, multifloræ.* Flores *juniores bracteis bifariam imbricatis occulti. Lindl.* (character ex Blume).

Dendrochilum *glumaceum;* pseudobulbis aggregatis fusiformi-ovatis, foliis solitariis lato-lanceolatis striatis inferne in petiolum (squamâ amplâ vaginatum) longe attenuatis, spicâ elongatâ lineari-oblongâ compressâ albâ, floribus distichis, sepalis petalisque paullo minoribus acuminatis, labelli trilobi basi bilamellati lobis lateralibus abbreviatis inflexis subacutis intermedio orbiculari, columnâ utrinque unidentatâ dente spiniformi elongato, apice bifido laciniato.

Dendrochilum glumaceum. *Lindl. Bot. Reg.* 1841. *Misc. p.* 23 *n.* 58. *Bot. Mag. t.* 4853.

This and *D filiforme* are unquestionably among the most elegant and graceful of Orchideous plants, as well as among the most desirable for cultivation. The leaves are ample for the size of the plant, sheathed below with large coloured scales, and the many spikes of ivory-white close-set distichous flowers, drooping from the extremity of a slender, almost filiform, curved stalk, cannot fail to attract attention. It is a native of the Philippines, and was imported by Mr. Cuming. It is readily grown in a hot, moist stove, and produces its very fragrant flowers at all times of the year. It succeeds best in a pot.

Descr. *Pseudobulbs* crowded, forming dense, spreading masses, small, the younger ones fusiform, the older ones more inclining to ovate. The former are clothed with two or more large, generally red, sheathing *scales*, within which is a much larger and longer (three to four inches long) sheathing, subcylindrical, inflated scale, tawny, and tinged with red. *Leaves* solitary, broad-lanceolate, rather obtuse, striated, tapering into a long *footstalk*, which is enclosed by the sheathing scale. *Peduncle* arising from the top of the pseudobulb, curved downwards, slender, filiform, sheathed below (as the petioles are), and bearing a graceful, pendent, elongated, linear-oblong *spike* of crowded, distichous, white, sessile *flowers*. In a young state these spikes almost resemble those of *Pholidota*. *Bracteas* lanceolate, convolute, white, at length tawny. *Sepals* and rather smaller *petals* uniform, spreading, oblong, acuminate. *Lip* small, projecting,

and recurved, three-lobed; lateral lobes acute, curved forward, middle lobe rotundate: the disc of the lip has two oblong lobes or thick lamellæ. *Column* short, compressed, having on each side, near the base, a long spiniform tooth: the apex winged, bifid, and laciniated. *Anther-case* conico-cucullate, placed just above the small stigma.

Fig. 1. Front view of a flower. 2. Column. 3. Labellum:—*magnified.*

W Fitch, del.

Vincent Brooks, Imp

Plate 135.

EPIDENDRUM NEMORALE.

Forest Epidendrum.

Gen. Char. (*Vide supra*, Plate 109.)

Epidendrum (Encyclium, § labello trilobo) *nemorale;* pseudobulbis ovatis, foliis 2–3 ensiformibus obtusis, scapo pedicellis ovariisque verrucosis, paniculâ multiflorâ nutante, sepalis petalisque lineari-lanceolatis acuminatis, labelli trilobi lobis lateralibus subfalcatis acutis nanis intermedio ovali crenulato basi serrato bilamellato, columnæ alis 2 nanis truncatis. *Lindl.*

Epidendrum verrucosum. *Lindl. Bot. Reg.* 1844. *t.* 51. *non Lindl. Gen. et Spec. Bot. Mag. t.* 4606.

A very lovely species of *Epidendrum* of the Encyclia-group, fragrant as well as handsome, a native of Mexico, imported from that country by Messrs. Loddiges. It requires a moderately cool house, and flowers in the early summer months.

When Dr. Lindley published his figure of this species in the 'Botanical Register,' he unfortunately overlooked the fact of an old West Indian species having been already published under the same name; but he subsequently discovered his mistake, and changed the name to *nemorale.*

Descr. *Pseudobulbs* ovate, clustered, the flowering ones narrow-ovate, smooth, dark green, and more or less sheathed with scales or the fibrous remains of them; the older ones larger, paler coloured, broader, wrinkled, and naked. *Leaves* two, from the apex of the bulb, from ten inches to a foot long, broad-linear or loriform, one-nerved, obtuse. From the axil of these leaves the *scape* arises, as thick as a goosequill and warted, except where it is covered with the sheathing bracteas, when nearly as long as the leaves gracefully drooping, and bearing a branching *panicle* of large lilac and white *flowers.* *Branches* and *ovary* also minutely warted. *Sepals* and *petals*, each two inches long, linear-lanceolate, uniform, spreading horizontally. *Lip* more than two inches long, pendent, three-lobed; lateral lobes oblong, subfalcate, half-embracing the column; middle lobe obovate, subrhomboid, very large, acuminate, streaked and lined with dark red, the margin crenulate, the *disc* white, bearing two lamellæ. *Column* as long as the lateral lobes of the lip, deep lilac, with a short white wing on each side beneath the anther. *Anther-case* hemispherical.

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 136.

LÆLIA GRANDIS.

Large-flowered Lælia.

Gen. Char. (*Vide supra*, Plate 128.)

Lælia *grandis :* caule clavato monophyllo, folio coriaceo, pedunculo bifloro basi spathaceo longiore, floribus subhorizontalibus, sepalis lanceolatis reflexis, petalis late lanceolatis crispis convexis, labello membranaceo venoso nudo undulato trilobo, laciniis lateralibus circa columnam convolutis et multo longioribus. *Lindl.*

Lælia grandis. *Lindl. et Paxt. Fl. Gard. v.* 1. *n.* 91, *cum xylog. Bot. Mag. t.* 5553.

This fine *Lælia* first made its appearance in the establishment of M. Morel, of Paris, where it flowered in the spring of 1850. In the year following it was exhibited at one of the great London shows, but from that time it would seem to have entirely disappeared from our collections, until its reintroduction in 1864 by Messrs. Hugh Low and Co., of the Clapton Nursery, who received a few plants of it from their collector at Bahia. From the same locality and about the same time, specimens were sent by Mr. Williams to the Royal Gardens at Kew, where one of them flowered finely in the summer of 1865, when it was drawn by Mr. Fitch for this work, in which the first coloured representation of the plant is now presented. Some slight discrepancies may be observed between Mr. Fitch's drawing and the woodcut in 'Paxton's Magazine,' but these are readily accounted for by the circumstance that the former was made from fresh flowers, while the latter was taken from specimens that had probably suffered in their transmission to this country

In its habit and the general aspect of its flowers *L. grandis* is undistinguishable from the *Cattleyas*, to which—but for its eight pollen-masses—it would at once be referred. And even the latter structural distinction cannot be implicitly relied upon, for I have examined specimens of so-called Lælias in which all but two pairs of pollen-masses were merely rudimentary. The circumstance of species of the two supposed genera breeding freely together—as has been proved by Mr. Dominy's experiments—is another fact pointing in the same direction, and goes far to justify Professor Reichenbach's opinion that they ought not any longer to be kept apart, except for the conve-

nience of cultivators. *Lælia grandis* should be grown with the *Cattleyas.* It is easily managed, and flowers during the summer months.

Descr. An epiphyte with stems under a foot high, narrow at the base, but swollen above, and bearing a solitary rigid *leaf*, which is rather broader at the base than at the point. *Peduncle* proceeding from an ample spathe, two-flowered. *Sepals* nankeen-coloured, lanceolate, about two inches long; *petals* rather wider in the middle than the sepals, and of the same colour, a little curled and in some cases toothed at the edges. *Lip* three-lobed, whitish, with purple veins. *Column* entirely concealed by the side-lobes of the lip, which are folded round it.

Fig. 1. Column. 2. Pollen-masses :—*magnified.*

W. Fitch, del.

Vincent Brooks, Imp

Plate 137.

DENDROBIUM FALCONERI.

Dr. Falconer's Dendrobium.

Gen. Char. (*Vide supra*, Plate 105.)

Dendrobium (§ Dendrocoryne) *Falconeri;* caulibus hic illic ramosis elongatis pendulis gracilibus striatis articulatis geniculis nodosis, foliis paucis parvis 1–3 terminalibus linearibus, pedicellis solitariis unifloris, floribus amplis speciosis, sepalis oblongo-lanceolatis subtortilibus petalisque ovatis æquilongis patentibus apice purpureo-maculatis, labello cucullato limbo vix trilobo ovato acuto undulato integerrimo ciliato disco aurantiaco basi apiceque purpureis, calcare brevissimo.

The sample here figured is only part of a stem, which was three to four feet long, with upwards of sixty flowers upon it, and which first bloomed in the collection of George Reid, Esq., of Burnham, Somerset, in the spring of 1856, almost immediately after its importation. It is a native of the mountains of Bootan, at an elevation of 4000 feet. Mr. Reid purchased it, under the name of *Dendrobium Falconeri*, at an auction in London. It certainly is among the most lovely of the genus, and very distinct from *D. Wardianum* (Warner's 'Select Orchids'), with which it is sometimes unaccountably confounded.

It should be grown in a mixture of potsherds, peat, and sphagnum, and suspended in a shallow pot or pan full of holes. The ordinary temperature given to *Dendrobia* will suit it, but it should be allowed two or three months' rest in the spring, by being removed to a cooler and drier situation (a vinery will do), where it should remain till it begins to show flower. Care, however, should be taken that the stems do not shrivel.

Descr. *Stem*, rather than pseudobulb, long, slender, branched, pendulous, jointed, the joints contracted in the middle, and consequently nodose at their point of junction, striated. *Leaves* few, one to three, terminal, very small and insignificant, linear. *Flowers* large, copious upon the branches. *Peduncles* solitary, arising from a geniculation, slender, single-flowered. *Sepals* spreading, oblong-lanceolate, somewhat twisted, acuminate, pale rose-colour, tipped with dark purple. *Petals* equal in length with sepals, but much broader, ovate, acute rather than acuminate, white-tipped, with a broad patch of deep purple spreading horizontally. *Lip* large, cucullate; the *limb* or *lamina* obscurely three-lobed, cordate, acute, waved; the ground-colour white, the disc

orange-yellow, with a large central dark-purple spot, another on the under side corresponding with it, and with the same colour at the tip; the margin is quite entire, but fringed or ciliated. *Spur* short. *Column* short, but decurrent with the spur. *Anther-case* oblong, hemispherical, downy.

Fig. 1. Column and anther :—*magnified.*

W Fitch, del

Plate 138.

CHYSIS BRACTESCENS.

Bracteated Chysis.

Gen. Char. Sepala paulo connata; laterali pedi producto columnæ adnato et calcar simulanti. *Petala* sepalis conformia. *Labellum* trilobum, patulum, venis basi callosis. *Columna* marginata, canaliculata, mutica. *Anthera* subrotunda, opercularis, glabra. *Pollinia* 8, in laminam luteam semifusa; quatuor exterioribus tenuibus, quatuor interiora crassiora abscondentibus. *Rostellum* laminatum, convexum.—Herbæ *epiphytæ, occidentales, ab arboribus pendulæ;* caulibus *Cyrtopodii depauperatis;* foliis *nervosis, basi vaginantibus;* racemis *lateralibus multifloris. Lindl.*

Chysis *bractescens;* bracteis cucullatis venosis foliaceis ovario longioribus, sepalis petalisque ovatis obtusis, labelli lobis lateralibus obtusis intermedio minore carnoso bilobo hypochilio plicato, lamellis 5 carnosis subæqualibus parallelis basi pubescentibus, columna latissima carnosa cymbiformi antice pubescente. *Lindl.*

Chysis bractescens. *Lindl. Bot. Reg.* 1840; *Misc. n.* 131; *et* 1841, *t.* 23.

Chysis bractescens is a Mexican plant introduced by the late Mr. George Barker, with whom it blossomed in 1840. It is much superior in beauty to its congeners *C. aurea* and *C. bractescens;* indeed, in the pure white of its sepals and petals, and the rich gold of the lip, it ranks as a formidable rival to *Phalænopsis amabilis* itself. It flowers in May or June, and is of the easiest culture, though it will not be content with a less degree of heat than Cattleyas require.

Fig. 1. Front view of the labellum. 2. Column. 3. Pollen-masses:—*magnified.*

W. Fitch, del

Vincent Brooks, Imp.

Plate 139.

CALANTHE MASUCA.

Purple-flowered Calanthe.

Gen. Char. Perianthium explanatum, liberum, v. sepalis lateralibus labello paullulum adnatis, subæquale. *Labellum* cum columna connatum, lobatum v. integrum, calcaratum v. muticum, disco lamellatum v. tuberculatum. *Columna* brevis, rostello sæpius rostrato. *Pollinia* 8, basi valde attenuata, quaternatim *glandulæ* bipartibili adhærentia.—Terrestres: scapis *erectis multifloris.* Folia *lata, plicata.* Flores *albi aut lilacini, raro lutei. Lindl.*

Calanthe *Masuca;* scapo erecto, foliis latis oblongis petiolatis acuminatis longiore, racemis multifloris, labello tripartito basi tuberculis seriatis 5-cristato, seriebus intermediis elevatioribus, laciniis lateralibus linearibus subfalcatis intermedia cuneata emarginata in unguem linearem laciniis lateralibus æqualem angustata, calcare longissimo falcato clavato, columnâ brevi obliquâ antice bifoveatâ, ovario pubescente. *Lindl.*

Calanthe Masuca. *Lindl. Gen. et Sp. Orchid. p.* 249. *Bot. Reg.* 1842. *Misc. p.* 51. *n.* 51. *Bot. Mag. t.* 4541.

Bletia Masuca. *Don, Prodr.*

Amblyglottis veratrifolia. *Blume, Bijdr. p.* 370?

According to Dr. Lindley, this plant is a native of "Nepal, Bengal, Ceylon, and probably Java." It blossomed in 1842 with Messrs. Rollisons, at Tooting, but, though a handsome and really striking plant, it was never figured. The specimen now represented is derived from the Royal Gardens at Kew, where it grows and flowers freely in a moist heat.

Descr. Terrestrial. *Leaves* large, herbaceous, oblong-lanceolate, tapering below, acuminated at the apex, plaited and striated. *Scape* erect, a foot and a half high, generally *shorter* than the leaves, terete, glabrous, terminated by a many-flowered *raceme,* with handsome purple *flowers. Bracteas* large, subulato-lanceolate, membranaceous: the upper ones coloured. *Sepals* and *petals* similar, oblong, acuminate, spreading. *Lip* tripartite, deep purple: lateral lobes linear-oblong, subfalcate, intermediate one broadly subcuneate; the base of the lip *below* extends into a very long narrow *spur,* furrowed on one side and bifid at the point: the base of the lip above on the disc bears a five-crested tubercle, the crests transversely furrowed. *Column* very short. *Anther* sunk into a deep hollow of the column. *Pollen-masses* eight, in two rows, much attenuated at the base.

Fig. 1. Column, lip, and spur. 2. Column and base of lip. 3. Pollen-masses:—*magnified.*

W Finch del

Tinsley Brothers Imp

Plate 140.

CYPRIPEDIUM FAIRIEANUM.

Mr. Fairie's Lady's Slipper.

Gen. Char. (*Vide supra*, Plate 123.)

Cypripedium *Fairieanum;* foliis loriformibus concoloribus apice obliquis apiculatis, scapo piloso, bracteâ brevi pallidâ apiculatâ, ovario glanduloso-piloso, sepalis glanduloso-pilosis dorsali erecto subrotundo apice recurvo antico breviore concavo oblongo obtusissimo, petalis lanceolatis obtusis decurvis reflexis margine crispis et basi intus fimbriatis, labello sepalo antico duplo longiore glabro oblongo basi convoluto, stamine sterili lunato, proboscideo piloso margine antico utrinque unidentato. *Lindl.*

Cypripedium Fairieanum. *Lindl. in Gard. Chron.* 1857, *p.* 740 *c.* *Bot. Mag. t.* 5024.

This charming plant was first flowered by Mr. Reid, of Burnham, Somersetshire (from whose specimens the drawing was taken), and shortly afterwards by Mr. Parker, of the Hornsey Nursery. In both cases the plants were obtained at a sale of Orchids from Assam, at Stevens's Rooms. The same plant was exhibited at the Exhibition of the Horticultural Society, in Willis's Rooms, by Mr. Fairie, of Liverpool (after whom it is named), and from which Dr. Lindley drew up his description above quoted. "It is," says Dr. Lindley, "an exquisitely beautiful species in the way of *Cypripedium insigne*, than which the flowers are much smaller. It seems nearest to *C. superbiens* of Reichenbach, but is much smaller in every part, has no warts on the involute sides of the lip, is quite differently coloured, and has a long proboscis-like appendage arising from the middle of the concave side of the crescent-shaped sterile stamen." The blossoms are certainly amongst the most exquisitely coloured and pencilled of any in the genus. It flowers in the later autumn months, and is managed as readily as the other members of this justly popular family.

Descr. Stemless. *Leaves* rising directly from the root in a somewhat cæspitose manner, distichous or pointing two ways, oblong-strap-shaped, acute, whole-coloured, the bases carinate and equitant. *Scape* longer than the leaves, erect, terete, green, downy, single-flowered. *Flower* large, extremely beautiful, arising from a terminal, sheathing, acute, woolly *bract*, which embraces the lower part of the dark-purple, elongated, glanduloso-pilose, somewhat fusiform *ovary*. *Perianth* much spreading, dorsal or superior *sepal* very large, cordiform, pale greenish-white, beautifully veined

with dark-purple, and partially streaked with darker green, the apex obtuse, recurved; two inferior sepals united into one small ovate obtuse *sepal*, pale, with streaks of green and purple, about one-third the size of the dorsal sepal. *Petals* oblong-lanceolate, peculiarly deflexed and curved, like the horns of a buffalo, white, streaked with green and purple. *Lip* very large, porrected, inflated, brownish-green, with purple reticulations, convolute at the base. *Sterile stamen* orbiculari-lunate, greenish, purple and white, downy; between the horns of the crescent is a downy proboscis, arising from the sterile stamen.

Fig. 1. Front view of the column. 2. Side view of ditto. 3. View of the under side of ditto, showing the stigma:—*magnified*.

W. Fitch del. et lith.

Plate 141.

CYPRIPEDIUM STONEI.

Mr. Stone's Cypripedium.

Gen. Char. (*Vide supra*, Plate 101.)

Cypripedium *Stonei;* acaulis, foliis binis pedalibus oblongis coriaceis obtusis brevi-mucronatis scapo elongato atro-purpureo folia subæquante subtrifloro, bracteis lanceolatis conduplicatis acuminatis, sepalis duobus (lateralibus in unum connatis) amplis late ovatis acuminatis, petalis 5-uncialibus pendentibus linearibus acuminatis basi ciliatis, labello unguiculato, ungue marginibus introflexis apice amplo cucullato calceolariformi, ovario sesquiunciali oblongo 6-angulari uniloculari, stamine sterili ovato carnoso obtusissimo, stigmate amplissimo obovato bilobo margine supra dense fimbriato.

Cypripedium Stonei. *Hort. Low.*

This superb species of *Cypripedium* was received in October, 1862, from the collection of J. Day, Esq., of Tottenham. It had been imported from near Sarawak, Borneo, by Messrs. Hugh Low and Son, of Clapton Nursery, at whose desire it was named after Mr. Day's able gardener, Mr. Stone. Nothing like this had been previously received from the Old World, but it was soon to be followed by another Oriental species of the same type (the *C. lævigatum* of our Plate 101), in which the long-tailed petals are still more strikingly developed. In this respect, however, both the above species are left far in the rear by the Peruvian *C. caudatum*, whose petals measure fully half a yard in length!

C. Stonei is scarcely distinguishable in habit either from *C. Lowii* or *C. lævigatum*, but it grows much more slowly than either. Dr. Lindley spoke of it in the 'Gardeners' Chronicle' (1862) as "the gayest of all the *Cypripedia*," a compliment that it well deserves. It flowers at different seasons.

Descr. Stemless. *Roots* large, vermicular, fleshy. *Leaves* with a few sheathing short scales at the base, ten to twelve inches long, two arising from the same root, oblong, coriaceo-carnose, dark green, subcanaliculate, very obtuse, with a short mucro. *Scape* radical, arising from between the two leaves, with a large conduplicate sheathing *bract* at the base, a foot long, terete, dark purple, terminating in our specimen in three large, very handsome, bracteated, pedicelled *flowers*. *Bracts* resembling that at the base of the scape, but smaller. *Pedicels* shorter than the bract, supporting an elongated, six-

angled, one-celled *ovary* or immature *capsule*, one and a half to two inches long. *Sepals* large, spreading, uniform in shape, but the upper one the largest, broad-ovate, acuminate, white within, streaked and mottled with dark-purple externally, and tinged with yellow; the lower one is, however, formed of the two lateral combined sepals. *Petals* four to five inches long, curved downwards, linear acuminate, tawny yellow, lined and blotched with purple, ciliated on the margin at each side of the base. *Lip* large, standing forward horizontally, the lower half contracted, the sides involute, white, the rest cucullate, purplish, with red reticulated veins; the whole shaped like a Turkish slipper. *Style* a short white *column*, bearing, upon a separate branch, two orbicular, yellow, sessile *anthers* at the base of a large, ovate, white, fleshy disk or abortive third stamen: another short branch of the style bears the *stigma*, a large, cordate, fleshy disk yellowish, margined with a thick filamentous fringe.

Fig. 1. Style and stigma, with staminiferous column, side view. 2. Front view of the same, showing the two anthers. 3. View of the upper surface of the stigma. 4. Front view of a labellum. 5. Transverse section of an immature capsule:—*all slightly magnified.*

W Fitch, del et lith

Vincent Brooks, Imp

Plate 142.

VANDA GIGANTEA.

Gigantic Vanda.

Gen. Char. (*Vide supra*, Plate 125.)

Vanda (§ Fieldia) *gigantea;* foliis late loratis apice obtusissimis emarginatis subæqualibus, racemis foliis duplo brevioribus, sepalis petalisque oblongo-obovatis obtusis æqualibus, labello incurvo canaliculato dolabriformi obtuso, callo conico in medio, auriculis nanis rotundatis. *Lindl.*

Vanda gigantea. *Lindl. in Wall. Cat. n.* 7326. *Gen. et Sp. Orchid. p.* 215. *Folia Orchidacea, part* 4, *Vanda, p.* 2.

Vanda Lindleyana. *Griff. Notul. part* 3. *p.* 353.

Fieldia Lindleyana. *Rchb. in Walp. Ann.*

The rare Orchidaceous plant here figured produced its noble pendent spike of golden-yellow blossoms,—we believe for the first time in Europe,—in the orchid-house of Veitch and Sons, in April, 1860. Mr. Griffith, in his Indian notes, observes of it: "It is the only plant of its kind I have hitherto seen capable of rivalling the American *Vandeæ*," which, as Dr. Lindley very naturally exclaimed, "must surely be an exaggeration." Indeed, it would be easy to select many species from among the *Dendrobia* of Continental India, or from the air-plants of the East Indies that would—as far as showiness is concerned—compete more successfully than our present subject with the best of the South American *Vandeæ*. The latter, however, are not the most brilliant section of the orchid-flora of the New World, where the *Cattleyas* and *Lælias* (both belonging to the tribe of *Epidendreæ*) contribute the richest colours. In our stoves *V. gigantea* grows slowly, but its habit is of the most stately character, and surpasses in that respect even *V. Batemanni*, which, with itself, Professor Reichenbach refers to the resuscitated genus *Fieldia*. The large copious distichous rich green leaves set off the large golden flowers to great advantage. It would need an imperial folio plate to do justice to the whole plant. It is an inhabitant of the Burman Empire, growing on *Lagerstræmia Regina*, on the banks of the Tenasserim river, near Barlavo, according to Griffith.

Descr. A large species, with copious foliage growing in a distichous manner. *Leaves* broadly lorate, recurved, a foot and a half long, very obtuse, and deeply and

unequally emarginate at the apex. *Raceme* large, drooping. *Flowers* three inches long in their greatest diameter, golden-yellow, richly spotted and blotched with cinnamon-brown. *Column* and *lip* white, the latter small in proportion to the petals. thick and fleshy. Column short.

Fig. 1. Side view of the column and lip. 2. Front view of the column and anther. 3. Pollen-masses :—*magnified.*

W. Fitch, del et lith.

Vincent Brooks imp.

Plate 143.

TRICHOPILIA SUAVIS.

Sweet Trichopilia.

Gen. Char. (*Vide supra*, Plate 115.)

Trichopilia *suavis*; pseudobulbis rotundatis compressis monophyllis, foliis lato-oblongis coriaceis subsessilibus, pedunculis nutantibus 2–3-floris, sepalis petalisque lineari-lanceolatis undulatis rectiusculis, labello maximo lobis undulatis crenato-dentatis, clinandrii cucullo lobato lobis tenuissime fimbriatis.

Trichopilia suavis. *Lindl. et Paxt. Fl. Gard. v.* 1. *p.* 44. *n.* 70.

Native of Central America, like most of the other species of the genus, from all of which it is extremely distinct. Its pseudobulbs are short and flat (not elongated) in which respect, as well as in its nodding three-flowered racemes, it resembles the otherwise very different *T. crispa*. It is difficult to decide whether the palm of beauty should be given to the latter or to *T. suavis* itself, but both are eminently lovely. Both are also very easily managed, but should not be kept too warm. There are many varieties of *T. suavis*, some of which have brighter spots than the one represented in the Plate. It produces its fragrant blossoms very freely in April and May.

Descr. *Pseudobulbs* extremely compressed, orbicular, aggregated, bearing a solitary, broad, elliptical, coriaceous *leaf*, contracted at the base into a short, laterally compressed *petiole*. From the base of a pseudobulb the *peduncle* merges, and is pendent, bearing two or three large and highly fragrant *flowers*, bracteated at the insertion of each flower; *bracteas* ovate, thin, membranaceous, white, streaked with brown. *Ovary* long, clavate, angled, pale green. *Sepals* and *petals* spreading, white or cream-coloured, lanceolate, acuminate, nearly straight or only slightly twisted. *Lip* very large, projecting forward, white or cream-coloured in its ground-colour; the lower half or claw is convolute upon the column, but enlarged suddenly upwards so as to constitute a funnel-shaped petal, with a very large oblique limb; this *limb* is three-lobed, spotted with pale purple, yellow in the throat, the lateral lobes waved and crenated, the middle lobe very large, slightly deflexed, emarginate or retuse at the apex, the margin crisped and crenulate. *Column* very long, terete, expanding at the apex in front into a large convex fleshy *stigma*, and bearing at the back of the

anther a four-lobed hood, each lobe beautifully fringed with long hairs. *Anther-case* helmet-shaped, acuminated. *Pollen-masses* on a narrow cuneated *caudicle*, with a small *gland* at the base.

Fig. 1. Column, with portion of the corolla and of the ovary. 2. Anther-case. 3. Pollen-masses :—*magnified.*

W. Fitch, del. et lith

Vincent Brooks, Imp.

Plate 144.

ANGULOA RUCKERI.

Mr. Rucker's Anguloa; blood-coloured var. – VAR. SANGUINEA (very rare) C. E. P.

Gen. Char. Flores subglobosi, nunquam patentes. *Sepala* lateralia invicem imbricantia, basi valde convexa nec in cornu producta; alterum nunc anticum nunc posticum, conforme, basi planum. *Petala* sepalo dorsali æqualia, et similia. *Labellum* coriaceum, unguiculatum, subconvolutum, semivolutum, trilobum, *lamina* carnosa lata plana, supra medium auctum, hinc quasi bilabiatum. *Columna* teres, clavata, libera; *clinandrio* nunc mutico, nunc lacinia acuta porrecta utrinque acuto. *Anthera* galeata, valvis membranaceis nunc in lacinulas acutas productis. *Pollinia* 4, plana, inæqualia, *caudicula* longa lineari, et glandula acuta.—Herbæ *epiphytæ, Granatenses et Peruvianæ*, Lycastis *facie*. *Lindl.*

Anguloa *Ruckeri;* pedunculo unifloro radicali squamis infimis imbricatis vaginato, sepalis subrotundis apiculatis obtusis in globum conniventibus, labelli trilobi antici lobis lateralibus obtusis æqualibus medio piloso infundibulari bilabiato, labio altero emarginato altero tridentato, columna integra. *Lindl.*

Anguloa Ruckeri. *Lindl. Bot. Reg.* 1846. *t.* 41.

Var. β. sanguinea. *Lindl. in Gard. Chron.* 1854. *p.* 271.

Anguloa Ruckeri, as originally figured by Dr. Lindley, was characterized by its flowers having deep crimson spots, on a yellow ground, and a deep crimson lip. The specimen, here represented, instead of having the ground-colour of the inside of the flower yellow with red spots is, except the labellum, of a deep rich blood-colour, a variety recorded in the 'Gardeners' Chronicle' as being in the possession of Messrs. Rollison, who sent the specimen here figured. The size and colour and form of the flower are very striking, and contrast well with the yellow flowers of *A. Clowerii*, to which, in many respects, it is closely allied.

The above-mentioned species, together with *A. uniflora*, which has white flowers, form a very interesting and remarkable group. They are all natives of Columbia, where they grow in vegetable mould under the shade of trees, a circumstance that should be borne in mind in their cultivation. They require large pots and moderate heat. Mr. Rucker grows all the species magnificently under the shade of vines. They flower in the early summer months.

Fig. 1. Labellum:—*magnified*.

W. Fitch, del et lith

Vincent Brooks, Imp.

Plate 145.

CŒLOGYNE OCHRACEA.

Ochre-spotted Cœlogyne.

Gen. Char. (*Vide supra*, Plate 104.)

Cœlogyne *ochracea ;* pseudobulbis apice tetragonis, foliis anguste lanceolatis obscure 5-nerviis in petiolum angustatis racemo paucifloro apice nutante longioribus, labelli 3-lobi intus pubescentis lobis lateralibus rotundatis intermedio ovato acuminato obtuso sinu denticulato integrove lamellis 2 rectiusculis integris cis medium apicem evanescentibus lineâ brevi elevatâ apice dentiferâ prope basin interjectâ. *Lindl.*

Cœlogyne ochracea. *Lindl. Bot. Reg.* 1846. *t.* 69.

This, if not a very showy, is at least a very elegant and fragrant species of *Cœlogyne*, common in the hilly and mountain regions of North-eastern India. It was first introduced to our collections by Thomas Brocklehurst, Esq., of The Fence, near Macclesfield. It usually flowers in May. While growing, it should be kept moist, but it does not require a high degree of heat.

Descr. *Pseudobulbs* clustered, small, oblong, slightly tapering, compressed below, obtusely four-angled above, at the base sheathed by the lower portion of large membranaceous scales. *Leaves* two or three terminating the fully formed pseudobulbs, lanceolate, submembranaceous, striated and subplicated, acute, tapering below into a long *petiole*, at length deciduous. The young pseudobulbs, before the leaves are developed, produce at the apex the nearly erect *peduncle*, with its raceme of seven or eight fragrant, white blotched with yellow, *flowers*. *Bracteas* lanceolate, boat-shaped, membranaceous, deciduous. *Sepals* and *petals* subspathulato-ovate, acute, spreading, pure white. *Lip* oblong, three-lobed; lateral lobes rounded, curved in (forming a concave base to the lower half of the labellum), somewhat gibbous or obtusely spurred below; middle lobe ovato-acuminate, reflexed: the whole is white, blotched with yellow, with two horse-shoe figures on the disk of the middle lobe of the lip, bordered with deep orange. The disk at the base has an elevated line. *Column* dilated upwards. *Anther-case* semiglobose. *Pollen-masses* four, attached to a gland.

Fig. 1. Side view of a column and lip. 2. Front view of a lip. 3. Front view of a column. 4. Pollen-masses :—*magnified.*

W. Fitch, del.

Vincent Brooks, lith.

Plate 146

PHALÆNOPSIS SUMATRANA.

Sumatra Phalænopsis.

Gen. Char. (*Vide supra*, Plate 114.)

Phalænopsis *Sumatrana;* foliis acutis, pedunculo plurifloro, sepalis oblongis acutis extus non carinatis, petalis cuneato-ligulatis acutis, labello brevi unguiculato tripartito, laciniis lateralibus ligulatis, apice retuso-denticulatis, retrorsum falcatis, extus oblique carinatis, laciniâ mediâ ligulato-panduratâ fornicatâ carnosâ, basi implicitâ, per lineam mediam carinatâ, antice dense pilosa, ligulis forcipatis duabus deinceps inter partitiones laterales, columnâ semitereti panduratâ, androclinio cucullato denticulato. *Rchb.*

Phalænopsis Sumatrana. *Korthals, Rchb. fil. in Otto, Ham. Gartenzeit,* 1860, 115, *alias* P. zebrina, *Hort. Bog. in Annales d'Hortic. et de Bot. ou Flore des Jardins du Royaume des Pays-Bas,* 1860, *fasc.* 10, *cum ic.*

P. zebrina *in Plantæ Nov. in Hort. Bog. Cultæ, auct. T. E. Teijsman et Binnendijk,* 1863, 15.

An interesting account—for which we are indebted to Professor Reichenbach—of this remarkable Phalænopsis appeared in the 'Gardeners' Chronicle' the first week of June, 1865. From this we learn that the species is a native of the province of Palembang, in Sumatra, where it was originally discovered by Korthals more than a quarter of a century ago. By him it would seem to have been sent to the Botanic Garden at Leyden, where it flowered about the year 1856, and where an imperfect figure—subsequently published in the 'Annales' as *P. zebrina*—was prepared. But although long since introduced to Continental collections, the species was never seen in this country before the spring of the present year (1865), when it flowered beautifully in the collection of Mr. Day, who exhibited at South Kensington the specimen from which Mr. Fitch's drawing was taken.

Professor Reichenbach remarks that the *anther*-lid is fringed after the manner of *Trichopilia*, and that the *apex* of the *lip* is furnished with "hairs quite as dense as in a good hat-brush." It is as easily managed as any of its congeners, but is still exceedingly rare.

Descr. *Leaves* pointed, about six inches long. *Flower-spike* about the length of the leaves, five- to ten-flowered. *Sepals* oblong, pointed, not carinate, an inch or

more long. *Petals* more cuneate than the *sepals*, which they otherwise resemble, both in form and colour, the latter being yellowish-white, barred with broad streaks of rich reddish-brown. *Lip* short, unguiculate, three-lobed, the lateral portions meeting in front and stretching backwards, in which direction they end in a sort of curved tooth; the middle portion, which is pressed closely together at the base, is fleshy throughout, and very hairy in front, of an oblong or slightly panduriform shape, carinate along its centre line, and provided with two slender, sharp, upright processes at the point of its junction with the lateral lobes. In colour the *lip* is white, with orange spots on its side partitions, and four lines of violet (or in some varieties lilac) streaks along its central lobe. *Column* white, semiterete, rather fiddle-shaped, with its *anther*-lid fringed.

Fig. 1. Side view of column and lip. 2. Front view of ditto :—*both slightly magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 147.

DENDROBIUM SENILE.

White-haired Dendrobium.

Gen. Char. (*Vide supra*, Plate 102.)

Dendrobium *senile* (Eudendrobia chrysantha) ; caulibus fusiformibus vaginis hirtis vestitis superne triphyllis, foliorum laminis cuneato-ligulatis acutis hirtis, racemis uni- seu bifloris ex pseudobulbis vetustis, sepalis ligulatis acutis, petalis cuneato-oblongis acutis, labello medio trilobo, lobis lateralibus semiovatis obtusis, lobo medio acuto, callo subtiliter trisulcato in basi, disco anteposito velutino, columnâ apice tridentatâ. *Reichenbach, fil.*

Dendrobium senile. *Parish, mss. Rchb. fil. in 'Gardeners' Chronicle,' May,* 1865.

The place that is occupied by *Cereus senilis* among succulents may be claimed for *Dendrobium senile* among Orchids, *white* hairs, which are inevitably represented as black in the Plate, being profusely scattered over its stems and leaves. These, joined to the long-lasting yellow blossoms, render the species at once a singular and attractive plant. It blossomed at Knypersley in April, 1865, and from the flowers then produced, compared with the wild specimens kindly lent by Messrs. H. Low and Co., the accompanying figure was prepared. It is rather a delicate, slow-growing species, and should be placed in a shallow pot, or on a block of wood, and suspended near the glass. It is amongst the most remarkable of the very many interesting plants discovered by the Rev. C. S. Parish in Moulmein.

Descr. *Stems* spindle-shaped, about six inches long, covered, as are the leaves, with short white hairs, and bearing two or three leathery, obovate *leaves*, that are shorter than the stems and sharp-pointed. *Flowers* in pairs or occasionally single, from the sides of the stem, fleshy and of a rich yellow colour throughout. *Sepals* ligulate, acute. *Petals* rather wider than the sepals, and somewhat cuneate, scarcely an inch long. *Lip* (not very deeply) three-lobed, the lateral lobes obtuse and semi-ovate, while the middle lobe is acute; on the base there is a callosity faintly three-furrowed, with a few orange streaks radiating from it. *Column* three-toothed at its apex.—*J. B.*

Fig. 1. Lip and column, seen nearly in front :—*magnified*.

W. Fitch, del. et lith

Vincent Brooks, Imp

Plate 148.

CIRRHOPETALUM MEDUSÆ.

Medusa's-head Cirrhopetalum.

Gen. Char. Sepala ringentia; lateralia acuminata, longissima, valde obliqua, basi productæ columnæ adnata, supremo multo longiora. *Petala* nana, apiculata. *Labellum* integrum, cum basi columnæ articulatum. *Columna* minima, basi longe producta, apice bicornis. *Anthera* bilocularis. *Pollinia* 4, quorum duo interiora multo minora, per paria connata.—Herbæ *epiphytæ;* rhizomate *repente,* pseudobulbos *monophyllos gerente.* Folia *coriacea, avenia.* Flores *dense racemosi, nunc radiati, in apice* scapi *radicalis. Lindl.*

Cirrhopetalum *Medusæ;* pseudobulbis ovatis tetragonis, folio oblongo convexo emarginato, vaginis scapi oblongis ventricosis supremo pedunculo longiore, floribus dense capitatis, sepalo supremo acuminato inferioribus longissimis pendulis, petalis triangularibus acuminatis, labello ovato-acuminato bicarinato, columnæ auriculis acutis. *Lindl.*

Cirrhopetalum Medusæ. *Lindl. Bot. Reg.* 1842, *t.* 12. *De Vriese, Illus. t.* 12. *f.* 2.

Bulbophyllum Medusæ. *Rchb. in Walpers' Annales.*

Strange as are the forms of the flowers of many of the tropical *Orchideæ*, there are few which present a more remarkable appearance than the present. Individually the flowers are small, but they are borne in dense clusters, and two out of the three sepals are so very much lengthened, as to give the spike the appearance of a head with very long dishevelled hair, which induced Dr. Lindley to call the plant the "*Medusa's-head Orchis.*" It is a native of Singapore, and was imported by Messrs. Loddiges to our stoves where it flowers freely in the winter-months. It should be grown on a block, in the East India house, of course.

Descr. *Pseudobulbs* ovate, compressed but subtetragonal, dark brown, with one or more large brown scales at the base, and arising from a creeping, slender *caudex* or *rhizome*. *Leaf* solitary from the apex of the bulb, large for the size of the plant (five to six inches long), ligulate, obtuse or retuse, fleshy and subcoriaceous, tapering into a short, terete *petiole* at the base. *Scape* arising from the base of the pseudobulb, a span long, erect or inclined, entirely clothed with large membranaceous, concave, sheathing, pale-green *bracts*, terminated with a bracteated *capitulum*, or short, rounded, many-flowered *spike,* its *bracteas* linear-lanceolate acuminate. *Flowers* sessile, small, white or cream-colour, faintly spotted with fulvous-yellow or buff-colour. *Sepals* from a rather broad ovato-lanceolate base, tapering, the *superior sepal* into a comparatively short

acumen: the two *lateral* into hair-like pendent apices, four to five inches long. *Petals* small, from a broad base subulate, longer than the column. *Lip* shorter than the petals, pressed to the base of the column. *Column* with two subulate, erect points, nearly as long as the petals, between which the *anther-case* is lodged.

Fig. 1. Flower (from which the long hair-like points are cut away for want of space to represent them in). 2. Flower, with the sepals removed. 3. Labellum:—*magnified*.

W. Fitch, del. et lith.

Vincent Brooks Imp.

Plate 149.

CYPRIPEDIUM HIRSUTISSIMUM.

Shaggy Lady's-slipper.

Gen. Char. (*Vide supra*, Plate 101.)

Cypripedium *hirsutissimum*; acaule, foliis distichis elongatis loratis acutis costatis enerviis basi carinatis canaliculatis equitantibus unicoloribus, floribus hirsutis, scapo bractea sepalisque dorso villosissimis, sepalo dorsali amplo latissime cordato-acuto, petalis amplis lato-spathulatis ungue profunde sinuato-lobato, sepalis lateralibus in unum ovatum coadunatis labello brevioribus, stamine sterili obtuse quadrato angulis obtusis.

Cypripedium hirsutissimum. *Lindl. mss.*

This is an extremely handsome species of the stemless group of *Cypripedia*, allied to *C. insigne*, *villosum*, *Hookeræ*, and *barbatum*; nevertheless abundantly distinct from them all. It is said to be a native of Java, and may therefore be associated in cultivation with *C. Lowii*, *C. Stonei*, and *C. lævigatum*, all of which come from the East Indian Archipelago, and therefore require a greater degree of heat than *C. insigne*, or other kinds from the higher parts of Central India. There are now in our gardens nearly twenty intra-tropical species of this remarkable genus, all of them eminently deserving a place even in the most *recherché* collections, and as they are very easily managed, a young Orchid-grower could scarcely select a better family to try his "'prentice hand" upon. When the writer of these lines entered the lists (in 1831) only two species (*C. insigne* and *C. venustum*) were known, and this latter was the first Orchid he ever bloomed.

Descr. Stemless. *Leaves* often a foot and more long, linear-oblong or ligulate, acute or bifid at the point, distichous, carinated, channelled and equitant at the base, costate, but not conspicuously striated, of a uniform green colour, and quite glabrous. *Scape* about equal in length to the leaves, terete, green, tinged with dark purple, villous or rather shaggy, as are the *bractea*, *ovary*, and whole back of the *flower*, with long, spreading hairs, suggesting Dr. Lindley's specific name. *Bract* broad-ovate, sheathing, single-flowered. *Pedicel* short, almost included within the sheath. *Sepals* all ciliated; *superior one* broad, rhomboidal-cordate, the margins at length reflexed, dark purplish-green, striated, quite green at the margin. *Lateral sepals* green, united into one, of

an ovate form, striated, shorter than the lip. *Petals* very large, spreading horizontally, broad-spathulate, ciliated, the lamina purple, the claw green, mottled and dotted with purple, singularly lobato-undulated at the margin. *Lip* large, deep green, with a tinge of purple, the margin ciliated. *Column* short, and, as well as the square *sterile stamen*, obtuse at the angles and with a swelling or boss in the centre, variegated with green and white, and spotted with dark purple.

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 150.

DENDROBIUM HETEROCARPUM.

Various-fruited Dendrobium.

Gen. Char. (*Vide supra*, Plate 102.)

Dendrobium *heterocarpum*; caulibus teretibus pendulis, foliis oblongis acutis planis, floribus geminatis ternatisque odoratis racemum spurium formantibus, sepalis lineari-oblongis acutis, petalis ovatis acutis sepalo supremo majoribus, labello unguiculato, limbo subpanduriformi holosericeo medio elongato acuminato plano. *Lindl.*

Dendrobium heterocarpum. *Wall. Cat. n.* 20. *Lindl. Gen. et Sp. Orchid. p.* 78. *Bot. Misc.* 1844, *p.* 49. *n.* 11.

Dendrobium aureum. *Lind. Gen. et Sp. Orchid. p.* 78; *and* Var. pallidum, *Lindl. Bot. Misc.* 1839, *t.* 20.

This handsome and fragrant *Dendrobium* was received at the Royal Gardens, Kew, from Assam, through Mr. Simons, in 1852, and it flowered there in January, 1853; the stems at that time, as is usual in the flowering season, being without leaves. Dr. Wallich detected it in Nepal; and we have the authority of Dr. Lindley for considering his own *D. aureum*, from Ceylon, as well as the *D. aureum*, var. *pallidum* (Lindl. Bot. Miscell. 1839, t. 20), as mere varieties of one and the same species, which is thus shown to have a very extensive range. It is easily grown, especially if suspended near the glass in a shallow pan. But it should always have a season of rest.

Descr. Epiphytal. From several horizontal, fleshy, cylindrical, wavy *roots*, spring a cluster of tereti-clavate, ribbed, jointed *stems*, a foot or more long. *Leaves* oblong, acute, plane, subcoriaceous, deciduous when the stem has attained its full development and is ready to bear flowers. *Peduncles* very short, almost none, lateral, from the apex of a joint, solitary or two or three, and bearing each one, sometimes two flowers, of a good size, and very fragrant. *Sepals* very patent, cream-colour, oblong, two lateral ones decurrent into a rather long, obtuse *spur*. *Petals* also patent, broader and more ovate than the sepals, otherwise resembling them, and of the same colour. *Lip* pendent, somewhat unguiculate and articulated on the prolonged base of the labellum, very obscurely three-lobed, lateral lobes obsolete, middle lobe very large, ovate or subpanduriform, and acuminated, the acumen much reflexed. The disk is cushioned and

beautifully velvety ; the colour, externally cream-colour, but within deep, almost golden yellow, streaked and veined with sanguineous lines. *Ovary* slender, clavate, greenish-white.

Fig. 1. Labellum. 2. Column, with its prolonged base. 3. Pollen-masses :—*magnified.*

Plate 151.

ANGRÆCUM SESQUIPEDALE.

Long-tailed Angræcum.

Gen. Char. (*Vide supra,* Plate 111.)

Angræcum *sesquipedale;* caule subsimplici radicoso, foliis distiche imbricatis oblongis basi attenuatis carinatis apice obtusissime bilobis, pedunculis axillaribus 2–5-floris, floribus inter maximos albis, petalis sepalisque patentibus subæqualibus e basi latis sensim acuminatis, labello cordato-ovato acuminato marginibus utrinque versus medium grosse crenato-serratis, calcare longissimo flexuoso viridi.

Angræcum sesquipedale. *Aub. du Pet.-Thouars, Hist. des Pl. Orchid. Afr.* 8vo, *t.* 66 *(flower, nat. size) and* 67 *(reduced figure). Lindl. in Gard. Chron.* 1857, *p.* 253 *(with woodcut of the flower, nat. size).*

Aeranthus sesquipedalis. *Lindl. Gen. et Sp. Orchid. p.* 244.

Beautiful as is *Angræcum eburneum* (see our Tab. 111), it shrinks into insignificance in comparison with the present species from Madagascar, known to botanists only through the figures above quoted of Aubert du Petit-Thouars (published about 1822), till the Rev. William Ellis, the distinguished traveller and historian of Madagascar, on his last return from that wonderful island, made us acquainted with the living plant, which that gentleman has twice flowered,—first in 1857, when the interesting account and figure appeared in the 'Gardeners' Chronicle,' and again in the winter of 1859, at his residence, Hoddesdon, Herts, where the drawing for the 'Botanical Magazine' was made. Though not one of the figures quoted, not even the original ones of Du Petit-Thouars (though there was ample space in the large folio page) exactly warrants the sesquipedalian specific name, still there is enough to excite astonishment in the great size of the flower, and extraordinary length of the spur. The former, in the specimen before us, measures seven inches across, and the spur one foot in length, so that if the spur were set on at the edge of the flower, instead of the middle, it would rather exceed than fall short of the size attributed to it. This flower is of a uniform, pure ivory or yellowish white, and it has the merit of possessing the odour of the white Garden Lily, *Lilium candidum.* The plant continually attracted the attention of Mr. Ellis as he travelled through its native woods; more than one of his photographs includes trunks of trees loaded with this prince of Orchideous plants.

and it is frequently the subject of his description and admiration. This plant should be constantly (except when in flower) kept in the East Indian house. It is most easily managed, and flowers profusely, some specimens having borne as many as six or seven racemes, with from three to five flowers each, on a single stem! Its flowering season is mid-winter. It is still rare, and very difficult either to increase or import.

Descr. The plant, including the leaves, does not appear to exceed two feet in height,—so that the flowers are sometimes as long as the plant,—simple or bearing one or two branches; attached to the trunks of trees by wiry fibres, rather densely clothed with distichous, spreading, more or less recurved *leaves*, of a broad oblong form, thick and fleshy, dark-green, imbricated, carinated at the base. *Peduncles* axillary, bearing from two to five gigantic ivory-white fragrant *flowers*, each subtended, at the base of the ovary, by a broad, ovate, coloured *bract*. *Sepals* and *petals* equally spreading, nearly uniform, three inches long, from a broad base, gradually acuminated, somewhat fleshy. *Lip* equal in size with sepals and petals, from a cordate base, ovate, acuminated, near the middle on each side coarsely and irregularly serrated; from the base of this, beneath, depends the very long, terete, but gradually tapering *spur*, one foot in length, green in colour. *Column* very short, thick, with two broad wavy wings on each side the stigma, which almost conceal that organ. *Anther-case* helmet-shaped, white, with a narrow, orange-coloured margin. *Pollen-masses* two, ovate, waxy, each attached to a somewhat linear *gland*.

The Plate represents a leaf, of the *natural size;* the upper part of a peduncle, with flowers, also *natural size*. Fig. 1. Entire plant, on a very reduced scale. 2. Apex of an ovary, column and anther. 3. Pollen-masses:—*magnified*.

W. Fitch, del et lith

Vincent Brooks. Imp

Plate 152.

GALEANDRA DEVONIANA.

Duke of Devonshire's Galeandra.

Gen. Char. Perianthium patens, sepalis petalisque subæqualibus ascendentibus. *Labellum* infundibuliforme, indivisum v. obsolete trilobum, ecalcaratum, intus lamellis (4) auctum. *Columna* erecta, membranaceo-alata, clinandrio declivi. *Pollinia* 2, postice excavata, caudicula brevi glandulæ brevi divergenti-bilobæ adnata.—Herbæ *terrestres, et epiphytæ,* caulibus *foliatis,* racemis *terminalibus. Lindl.*

Galeandra *Devoniana ;* caule erecto simplici tereti polyphyllo, foliis lanceolatis 3-nerviis, racemo sessili erecto multifloro, labelli laminâ ovatâ obtusâ crenulatâ lamellis 4 pone basin, antheræ cristâ carnosâ rotundatâ pubescente. *Lindl.*

Galeandra Devoniana. *Schomb. in Lindl. Sert. Orchid. tab.* 37.

One of the finest of South American Orchideæ. It was first detected by Schomburgk on the Rio Negro, a river which discharges itself into the Amazon, and Mr. Spruce and others have more recently met with it in the same locality. Schomburgk saw it growing (usually on the ground) five to six feet high, and in clusters or patches from ten to twelve feet in circumference. It is still rare in collections, and is generally considered difficult to manage, but with Mr. Rucker—who grows it in a pot in his East Indian house—it thrives luxuriantly, and flowers splendidly twice a year. *G. Stangeana*, from the same country, also likes a warm stove, but the other species prefer a cooler situation.

Descr. *Stems* uniform to the base (no pseudobulbs), clustered, three to five or six feet high, scaly below, leafy above: *leaves* much sheathing at the base, linear-ensiform, acuminated, striated, glabrous, membranaceous. *Panicle* terminal, with few but large *flowers; branches* and *peduncles* bracteated. *Sepals* and *petals* spreading and slightly ascending, lanceolate, striated, darkish-purple, green at the margin and at the base externally. *Lip* very large, projecting, white, tipped and streaked with purple, broadly obovate, obscurely three-lobed, the sides meeting so as to form a lax tube around the column, intermediate or spreading, deflexed, retuse: near the base within are four lamellæ. *Column* within the tube-like portion of the labellum, slightly winged at the margin. *Anther* with a large, downy, erect crest.

Fig. 1. Column. 2, 3. Pollen-masses :—*magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Imp

Plate 153.

CYPRIPEDIUM CONCOLOR.

Self-coloured Lady's-slipper.

Gen. Char. (*Vide supra,* Plate 101.)

Cypripedium *concolor;* acaule, foliis (3–5) coriaceis oblongis obtusis arctissime implicatis canaliculatis maculatis subtus intense purpurascentibus scapo pubescente bifloro 2-plo longioribus, bracteâ foliaceâ acuminatâ ovario tomentoso vix æquali, sepalis subrotundis labello breviter unguiculato conico-saccato longioribus, stamine sterili subcordato cuspidato.

Cypripedium concolor. *Bateman in Bot. Mag. pl.* 5513.

This new *Cypripedium* differs entirely from all the species of that extensive genus at present known to us. Its leaves are compactly arranged, and being beautifully mottled on their upper surface and of a rich reddish-purple below, they contrast agreeably with the pale-primrose tint of the flowers, two of which are borne on a short hairy scape. It is a native of Moulmein, where it was found growing on limestone rocks by the Rev. C. Parish, who forwarded a careful drawing to Sir William Hooker. Colonel Benson also found it in the same localities, and dispatched living plants to Kew, where they are now thriving. Other specimens were received at the Clapton Nursery from Mr. Parish, one of which having found its way into Mr. Rucker's collection, flowered there early in the year 1865, while another blossomed in the collection of Mr. Day. Both were exhibited at the Tuesday meetings of the Horticultural Society at South Kensington, and justly attracted a good deal of attention. The drawing was taken from Mr. Rucker's specimen.

C. concolor seems to grow and flower as freely, and to be managed with as little difficulty as the other Indian *Cypripedia.* But it certainly prefers a good heat, and should be potted in an *open* mixture of peat and sphagnum.

Descr. *Leaves* four or five together, lying nearly flat, oblong, channelled, beautifully mottled on their upper surface with light-green on a darker ground, but of a reddish-purple underneath; they are from four to six inches long. *Flower-scape* very short, hairy, purple, scarcely raised above the leaves, usually two-flowered. *Bracts* large and pointed, one at the base of each flower, covered with minute hairs. *Flowers* fully two inches across, of a uniform pale-yellow, sprinkled over with minute crimson

dots. *Dorsal sepal* nearly round, about the same size as the lower sepal, the latter being of a more ovate form. *Petals* oblong, obtuse, fringed—as are also the sepals—with minute hairs. *Lip* small for the genus, not quite so long as the petals, forming a narrow conical pouch, which occupies nearly three-fourths of its entire length.—J. B.

Fig. 1. Upper end of sterile stamen. 2. Side-view of ditto. 3. Side-view of lip:—*magnified.*

W. Fitch, del et lith.

Vincent Brooks, Imp.

Plate 154.

ONCIDIUM FALCIPETALUM.

Hook-petaled Oncidium.

Gen. Char. Perianthium explanatum. *Sepala* sæpius undulata, lateralibus nunc sub labello connatis. *Petala* conformia. *Labellum* maximum, ecalcaratum, cum columnâ continuum, variè lobatum, basi tuberculatum vel cristatum. *Columna* semiteres, libera, apice utrinque alata. *Anthera* semibilocularis, rostello nunc abbreviato, nunc elongato rostrato. *Pollinia* 2, posticè sulcata, caudiculâ planâ, glandulâ oblongâ. Herbæ *epiphytæ sæpius pseudobulbosæ*. Folia *coriacea*. *Lindl. Gen. et Sp.*

Oncidium *falcipetalum;* foliis lanceolatis acutis pergameniis scapo longissimo, floribus dense paniculatis, bracteis cymbiformibus obtusis, sepalis breve unguiculatis supremo subrotundo cordato, lateralibus ovato-oblongis obtusis, petalis sessilibus brevioribus oblongis crispis complicatis falcatim recurvis, labello carnoso hastato acutissimo basi utrinque corrugato et lamellis dentatis aucto, columnâ lævi, alis parvis semi-ovatis unidentatis.

Oncidium falcipetalum. *Lindl. Orchid. Lind.*

Odontoglossum hastilabium, *var.* fuscatum. *Hook. in Bot. Mag. t.* 4919.

A native of Venezuela, where it is found both on the ground and on trees, at an elevation of 5–6000 feet. Living flowering specimens were first produced March, 1856, in the collection of Messrs. Jackson and Sons, Kingston Nursery. The wild spikes are sometimes twenty feet long, a stature four times greater than has yet been attained in cultivation. A moderate temperature suits it best.

Descr. A large epiphytal plant. *Pseudobulbs* four or five inches tall, broad and compressed, furrowed, bearing two or more leaves at its extremity, which are linear-oblong, obtuse, subcoriaceous, not distinctly nerved in the recent plant, slightly keeled at the back. *Peduncle*, or *scape*, from two or three to (in a wild state) twenty feet long, arising from the base of a pseudobulb, and within a leaf springing from the root, panicled above. *Panicle* large, branched, many-flowered: at the setting of the branches is a small convex *bract*. *Sepals* and *petals* much spreading, nearly uniform (the petals however being a little shorter and broader, and crisped at the edge and more incurved), lanceolate, acuminate, subfalcate, subconduplicate, chocolate-brown within, outside green: brown at the margin. *Lip* three-lobed, unguiculate, side-lobes very small, ovate,

intermediate ones very broad arrow-shaped, white (the disk red), with the two side-wings falcate, the apex suddenly acuminate, the margin a little crisped; on the disk are several long, sharp tubercles or fleshy projections.

Fig. 1. Column and lip. 2. Pollen-masses.

W. Fitch, del. et lith.

Vincent Brooks, Imp

Plate 155.

DENDROBIUM HEDYOSMUM.

Sweet-scented Dendrobium.

Gen. Char. (*Vide supra*, Plate 102.)

Dendrobium *hedyosmum ;* caulibus erectis nigro-hirsutis spithamæis, floribus lateralibus geminatis odoratissimis, sepalis petalisque subæqualibus ovato-lanceolatis acutis nitidis, labelli trilobi lobis lateralibus erectis acutis intermedio majore margine crispulo, disco sulcato, apice acuto decurvo.

Dendrobium hedyosmum. *Bateman in Bot. Mag. pl.* 5515.

Dendrobium albo-viride. *Parish in lit.*

Although the vast majority of the species of the great Indian genus *Dendrobium* are entirely scentless, a few, *e.g. D. macrophyllum*, send forth disagreeable odours, while a still smaller number, among which may be classed the subject of the accompanying Plate, yield the most grateful perfumes. The fragrance of *D. hedyosmum* might almost be mistaken for Wallflower.

Our plant was received from Moulmein in 1863, by Messrs. Hugh Low and Co., of the Clapton Nursery, under the name of *D. albo-viride*, which had been provisionally given by its discoverer, Mr. Parish. And, indeed, when the flowers of a specimen at Knypersley, from whence the figure is taken, first opened, they were unmistakably of a pale greenish-white, and so far justified Mr. Parish's specific name; but in the course of a few days these tints disappeared, the sepals and petals began to shine like polished ivory, while the disk of the lip glowed with a rich orange-yellow, thus entirely changing the appearance and character of the blossoms, and rendering the name of *albo-viride* no longer appropriate. Under these circumstances, I have ventured to substitute the name of *hedyosmum*, in allusion to the delicious perfume of the flowers,—a change which I cannot doubt will be approved by Mr. Parish himself.

D. hedyosmum flowers in the spring, and its blossoms, after undergoing the change described above, continue in beauty for many weeks. It requires no particular treatment, but care should be taken that its roots do not touch anything that is sodden.

Descr. *Stems* erect, clustered together, about a span long; when young, clothed

with small black hairs, which speedily fall off. *Leaves* narrow, short and leathery, unequally emarginate at their points. *Flowers* in pairs, opposite the joints of the leaves, and freely produced over the whole of the upper half of the stems, exuding a delicious fragrance resembling Wallflower. *Sepals* and *petals* nearly equal, scarcely an inch long, ovate-lanceolate, acute, turned slightly backwards, presenting a polished surface resembling ivory, and of the purest white. *Lip* about the same length as the petals, three-lobed, its lower portions erect, stretching forwards, acute, of a greenish tint, its central lobe oval, pointed, recurved, yellow, with rich orange furrows along its disk; the mentum very small. *Column* about the length of the lower lobes of the lip.

Fig. 1. Front view of lip and column. 2. Pollen-masses :—*magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Imp

PLATE 156.

CATTLEYA ELEGANS.

Elegant Cattleya.

Gen. Char. (*Vide supra,* PLATE 119.)

CATTLEYA *elegans;* pseudobulbis teretibus cauliformibus elongatis, foliis binis vel solitaris scapis 2–10-floris, lineari-oblongis coriaceis, sepalis oblongis acutis petalis lato-lanceolatis acutis, labelli trilobi lobis lateralibus elongatis obtusis columnam involventibus intermedio apice latissimo transverso subunguiculato vix emarginato undulato-crispato, basi læviusculo ("venis callisque deficientibus").

CATTLEYA elegans. "*Morren, Annales de Gand, p.* 185."

CATTLEYA elegans. *Pescatorea, pl.* 23.

LÆLIA Turneri. *Warner's Select Orchidaceous Plants, v.* 1.

BLETIA (Lælia) elegans. *Rchb. in Walpers' Annales, v.* 6. *p.* 427.

Received (in the autumn of 1852) from Messrs. Backhouse, York Nursery, as a new species of *Cattleya*, from St. Catharine's, Brazil. It appears, however, to have been already published by Professor Morren, at Ghent, and in 'Pescatorea,' under the name of *C. elegans.* It varies in the size and in the tinting of its sepals and petals, which are sometimes of a pale lilac, and at others of deep rose. It varies, also, in the number of flowers borne in a scape, but this is chiefly owing to cultivation. With Mr. Rucker—whose *Cattleyas* are always wonderfully fine—the stems are two feet high, bear two leaves, and are crowned with at least a dozen flowers. It is a charming species, and easily managed.

W. Fitch, del.et lith

Vincent Brooks, Imp.

Plate 157.

GALEANDRA DIVES.

Yellow Galeandra.

Gen. Char. (*Vide supra*, Tab. 152.)

Galeandra *dives ;* caulibus erectis simplicibus polyphyllis, foliis lanceeolatis acuminatis, spathis membranaceis vaginantibus acutis, paniculâ flexuosâ, bracteis lanceolatis acuminatis scariosis ovariis pedicellatis 3-plo brevioribus, sepalis petalisque subæqualibus lanceolatis acuminatis, labello transverse rhombeo apice late retuso obtuse trilobo (lobis lateralibus quam medio vix longioribus) carinis duabus in fundo, postice in calcar ab ostio amplissimo tenui extinctorii-formi ovarium pedicellatum adæquans productum.

Galeandra dives. *Rchb. Bonpl.* ii. 38; et *in Walpers' Annales, v.* 6.

Galeandra Baueri, *var.* floribus luteis. *Hooker in Bot. Mag. t.* 4701.

A great deal of confusion, to which I have contributed my full share, exists among the species of Galeandra. A flower (magnified) of the original species, *G. Baueri*, was published about 1833 in Dr. Lindley's 'Illustrations of Orchidaceous Plants,' which was said, and I have no doubt correctly, to have come from Cayenne. A few years afterwards a plant, introduced by the late Mr. Barker from Mexico, produced two or three miserable flowers, which were pronounced by Dr. Lindley—though I now think erroneously—to be identical with those of his *G. Baueri*. Of these flowers a drawing was made, and the plant through hot treatment speedily died. Shortly afterwards Mr. Skinner sent over some plants from Guatemala which were thought, on what appeared to be invincible evidence, to be a fresh batch of *G. Baueri*, and from these—some of which had borne as many as twenty flowers on a spike—assisted by the drawing from Mr. Barker's specimen, Miss Drake prepared the figure of the species that was published in my 'Orchidaceæ of Mexico and Guatemala.' My vexation will therefore be imagined when—some years afterwards—one of Mr. Skinner's plants flowered and, instead of the Galeandra, turned out to be a new Epidendrum (*E. lacertinum*), of which, besides being more numerous, the flowers were disposed in a manner totally different from those of the species it had simulated. Well may Professor Reichenbach speak of the plate in question as "icon phantastica" (Walpers' 'Annales,' *v.* 6, sub *Galeandra*). My mistake was however paralleled by that of my lamented friend

Sir William Hooker, who received from Syon, in 1852, specimens of the beautiful Galeandra figured in the accompanying Plate, which he published as a yellow-flowered variety of *G. Baueri*, a species with which it has little or no affinity. It is, in reality, the *G. dives* of Reichenbach, and was brought to this country (where, alas, it does not exist now!) by Warszewicz, who discovered it in New Granada. It no doubt disappeared—like the Mexican *G. Baueri* (?)—through being kept too warm. I do not think the latter has ever been discovered except in Mexico proper; and, if so, Dr. Lindley's Cayenne plant must be, as indeed I do not doubt it is, a totally different thing.

Descr. Epiphytal? *Pseudobulbous* stems elongated, a foot or more long, narrow, almost cylindrical, clustered, bearing several lanceolate, submembranaceous, sharply-acuminated, almost erect *leaves*, with three principal and some lesser nerves, dark green above, paler and slightly glaucous beneath. From the apex of the elongated stem-like pseudobulb the short *peduncle* appears, with its very drooping *raceme* of full yellow *flowers*, ten to fourteen upon the rachis. *Bracteas* among the flowers, small, subulato-membranaceous, larger on the peduncle; *sepals* and *petals* very patent, at length reflexed, lanceolate, nearly equal in size and shape. *Lip* infundibuliform (not unlike the large spurred sepal of *Impatiens*), very deep yellow at the base, paler at the extremity, and there marked with dotted blood-coloured lines; obscurely three-lobed, the side-lobes involute, and lapping one over the other, the middle lobe obtuse or retuse, much waved at the margin, mucronate and recurved at the point: the base of the lip runs out into a long nearly straight spur or tail, longer than the ovary. *Column* quite concealed within the lip, elongated, semiterete. *Anther* helmet-shaped, with a recurved point.

Fig. 1. Lip. 2. Column and anther:—*magnified.*

W. Fitch, del. et lith

Vincent Brooks, Imp

Plate 158.

DENDROBIUM MACCARTHIÆ.

Mrs. MacCarthy's Dendrobium.

Gen. Char. (*Vide supra,* Plate 102.)

Dendrobium *MacCarthiæ ;* caulibus pendulis flagelliformibus teretibus striatis versus apicem foliosis, nodis parce tumidis, racemis axillaribus 2–5-floris, floribus magnis dilute purpureis, sepalis lanceolatis acutis petala multo latiora ovato-lanceolata longitudine fere æquantibus, labello subtrilobato vel subtrapeziformi apice rotundato retuso, foliis lanceolatis.

Cypripedium MacCarthiæ. *Hooker in Bot. Mag. pl.* 158.

This most beautiful species of *Dendrobium*, which long escaped the observation of botanists in Ceylon, occurs sparingly, pendent from the trunks of large trees, in the forests about Ratuapoora and towards Galle, where it seems to be pretty generally known to the natives under the name of "*Wissak-mal*," the meaning of which is "Rainy-month flower," or "May-flower." It was originally sent from Mr. Thwaites to the Royal Gardens, Kew, where it flowered for the first time in 1864.

It is the most beautiful of the Ceylon *Orchidaceæ*, and was named by Sir William Hooker in compliment to Mrs. MacCarthy, the accomplished lady of the Honourable C. J. MacCarthy, Colonial Secretary of the Island, to whose kindness and regard for science botanists are deeply indebted.

Though it flowered at Kew in the previous year, it was first exhibited to the public in 1865 by Dr. Ainsworth, of Manchester, who sent a beautiful specimen to one of the Tuesday Meetings at South Kensington. Since then it has appeared in other collections. It is very easily grown in heat and moisture, and seems scarcely to require any rest, as it is continually pushing new shoots, even before the old are matured. It flowers abundantly (and without casting its leaves) during the summer and autumn; the flowers lasting two or three months in perfection. A shallow pan, suspended near the glass, suits it best. It is one of the most beautiful and desirable of Orchids.

Descr. *Stems* simple, one and a half to two feet long, of about the thickness of a goose-quill, striated, slightly swollen at the joints; internodes one to one and a half inch long. *Leaves* few at the upper part of the stem, lanceolate, two and a half to three inches long and from three-quarters to one inch wide. *Racemes* one to three, each one in the axil of a leave, four- or five-flowered; *peduncles* with several sheathing

bracts at the base; *pedicels* whitish, about one and a quarter inch long. *Flowers* handsome, nearly three inches long and three and a half inches wide, flattened vertically, pale purple. *Sepals* narrow-lanceolate, nearly equalling in length the much wider oblong-lanceolate *petals; lip* of the same length as the petals, somewhat trapeziform, rounded at the apex, retuse, scarcely three-lobed, somewhat carinated above, white, with numerous small purple spots on the throat, a large dark purple blotch on the disk, and the apex broadly margined with paler purple, with about seven dark purple longitudinal streaks. *Column* white, slightly tinged with purple, subquadrate, with two truncated erect or slightly reflected horns, between which is situated the helmet-shaped, purplish *anther-cell;* the four narrow yellow *pollen-masses* cohere into an oblong mass.

Fig. 1. Column and anther-case:—*magnified.*

N. Fitch, del. et lith

Vincent Brooks, Imp

Plate 159.

ANGULOA UNIFLORA.

One-flowered Anguloa.

Gen. Char. (*Vide supra*, Plate 144.)

Anguloa *uniflora;* pedunculo uni-floro radicali squamis base imbricatis inflato-tubulosis vaginato, sepalis ovatis acuminatis cucullato-concavis sepalis subconformibus minoribus modice concavis, labelli trilobi lobis lateralibus rotundatis obtusissimis intermedio lineari-angusto reflexo-revoluto, columnâ apice laciniis duabus subulatis auctâ.

Anguloa uniflora. *Ruiz et Pav. Fl. Peruv. Syst. p.* 228. *Fl. Peruv. Prodr. p.* 118. *t.* 26. *Lindl. Gen. et Sp. Orchid. p.* 160. *Bot. Reg.* 1844. *t.* 60.

Anguloa virginalis. *Hort.*

Anguloa eburnea. *Hort.*

Three species—all from New Granada—of this remarkable genus are now known, viz. *A. Clowesii* (the best of them all), Bot. Reg. 1844, t. 63, *A. Ruckeri*, Lindl. Bot. Reg. 1846, t. 41, and *A. uniflora*, Ruiz et Pav., Lindl. Bot. Reg. 1844, t. 60, but it is to the latter that the present species must be referred, differing only in the colour of the flower, here tinged with blush, and spotted with the same tint. There are many varieties of this species, some of them of a purer white, and much larger than others. All the *Anguloas* are terrestrial, and should be grown in a shady part of the Orchid-house. They may be considered as cool Orchids, except when growing, and even then they require only a moderate degree of heat. Mr. Rucker finds them—at the season in question—to do best under the shade of vines.

Descr. *Pseudobulbs* oblong, attenuated, furrowed, clustered; younger ones sheathed, with large green membranaceous *scales*, which gradually pass into true *leaves*, of which there are three or four, broad, elliptical-lanceolate, acute, membranaceous, striated. *Peduncle*, or *scape*, from the base of the pseudobulbs, nearly as long as the leaves, sheathed with membranous green *bracteas*, and bearing one large flower from the uppermost sheaths. *Sepals* ovate, acuminate, concave, the two lower or lateral ones almost cucullate at the lower base; all fleshy, as are the *petals*, which are similar in shape to the sepals, but narrower and smaller. The *flower* is a dirty cream-colour, tinged and spotted, chiefly within, with pink. *Lip* as long as the column, to which it

is applied, subsemicylindrical—that is, the sides are involute; three-lobed, yellowish, spotted with pink; *lateral lobes* subrotund, very obtuse; *intermediate* one in a deep sinus of the lateral lobes, linear, narrow, revolute; the *lamina* occupying the disk is bifid at the apex, and projects a little beyond the sinus of the two lobes. *Column* terete, clavate, the apex or *clinandrium* with two projecting, large, subulate laciniæ. *Anther-case* hemispherical.

Fig. 1. Column and lip. 2. Front view of lip. 3. Pollen-masses.—*magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 160.

CŒLOGYNE PANDURATA.

Fiddle-lipped Cœlogyne.

Gen. Char. (*Vide supra*, Plate 104.)

Cœlogyne (§ Flaccidæ)* *pandurata;* foliis maximis multinerviis, racemo longo multifloro subpendulo, bracteis oblongis cucullatis distantibus persistentibus, petalis sepalisque lineari-oblongis, labello basi concavo cordato-oblongo retuso cis apicem crispo setaceo-acuminato (lateribus deflexis) pandurato, lobis basilaribus nanis acuminatis, disco lævi tricarinato utrinque cristâ altâ duplici verruculosâ aucto citra cristam copiose verrucoso.

Cœlogyne pandurata. *Lindley in Gard. Chron. Dec.* 10, 1853; *Folia Orchidacea, part 5, Cœlogyne, p.* 3.

This very fine Orchideous plant is, in its colouring, so very unlike the hitherto best-known species of *Cœlogyne* (*C. Parishii* alone excepted) that at first sight it would not be easily recognized as belonging to the genus: yet it possesses all the characters. Indeed, it is rare for flowers of any genus to be so truly black and green as those of the present plant. It is a native of Borneo, imported by Mr. Low of the Clapton Nursery, and described by Dr. Lindley in the works above quoted, from a flowering plant in the possession of Messrs. Loddiges, Hackney Nursery, December, 1853. The spring or early summer is, however, its more usual season of flowering, if properly grown. For this purpose, it is necessary to give it a great amount of heat and moisture, especially while pushing its shoots. If the plant be vigorous and healthy, these will each contain a spike of flowers, which soon show themselves if they be there at all; if not—and especially if the growth be made late in the year—disbudding is often desirable, for it enables the plant to concentrate its efforts on new shoots which will be made under more favourable circumstances in the spring. The flowers last for about a week.

Descr. *Pseudobulbs* oblong-ovate, rather large, slightly compressed. *Leaves* very large, broad-lanceolate, longitudinally striated and plaited. *Raceme* about as long as the leaves (eighteen or twenty inches), many-flowered. *Flowers* about two inches apart, green, in a pendent *raceme*, furnished with brown (green when young), cucul-

* This section (*Flaccidæ*) is known by its long and usually pendulous racemes.

late, deciduous *bracts*, as long as the peduncle. Each *flower* is about four inches across if fully expanded, with pale-green *sepals* and *petals*, and a singularly warted *lip*, marked with deep broad black veins and stains upon a greenish-yellow ground. The *crests* are two, deep, double-warted lines, on each side of a three-ribbed, central *disc;* these crests converge towards the middle of the *lip*, where they lose themselves in a field of pallid, rugged, irregularly situated, often two-lobed warts. The *column* is green, slightly expanded into thin, rounded edges. The *lip*, although really oblong, yet, in consequence of the manner in which the sides are bent down, has much the form of a violin.

Fig. 1. The lip, *nat. size*. 2. The column. 3. Pollen-masses :—*magnified*.

W Flavin del et lith

Vincent Brooks [illegible]

Plate 161.

RENANTHERA LOWII.

Mr. Low's Renanthera.

Gen. Char. Petala patentia, 3 inferiora (quoad axin florum) subæqualia, lineari-spathulata, 2 superiora multo majora, undulata, unguiculata. *Labellum* sessile, parvum, bituberculatum, inferne conico-saccatum, 3-lobum, *lobis lateralibus* erectis, rotundatis, *intermedio* acuto reflexo basi constricto. *Germen* rectum. *Columna* brevis, aptera. *Anthera* opercularis, obtusa, decidua, pseudo-bilocularis. *Massæ pollinis* 2, postice bilobæ, pedicellatæ; pedicello lato membranaceo: *glandulâ* ad basin magnâ.

Renanthera *Lowii;* caulibus robustis subramosis altissime scandentibus, foliis coriaceis ligulatis retusis, spicis simplicibus longissimis pendulis flaccidis multifloris, floribus heterogeneis, sepalis petalisque sæpius lanceolatis undulatis acutis sed in floribus (duobus) versus basin spicæ sitis sepalis petalisque carnosis obtusis.

Renanthera Lowii. *Reichenb. Xenia, p.* 89. *Lemaire, Illustration Hortic.* 1864, 417.

Vanda Lowii. *Lindl. Gard. Chron.* 1847, *p.* 239. *Warner, Select. Orch.* ii. *t.* 4.

A more remarkable plant than the subject of the present Plate is not to be found among the vast and varied tribe to which it belongs. While in the stateliness of its habit and in the length of its flower-spikes it stands quite unrivalled among the Orchids of the Eastern world, its greatest peculiarity is to be found in the constant occurrence of *two entirely distinct forms of flower on the same spike.* This extraordinary circumstance was first observed by Professor Reichenbach, who satisfied himself, after a careful examination of fresh specimens furnished from M. Reichenheim's garden, that the strange phenomena had nothing to do with the separate production of male or female blossoms, since the organs in either form were equally perfect. Neither is this strange dimorphism to be classed with such fantastic changes as have been observed in *Cycnoches, Catasetum*, and the like, of which sundry examples are given in the 'Botanical Register' and the 'Orchidaceæ of Mexico and Guatemala.' In those instances certain alien forms were associated with flowers of the normal type, but they appeared capriciously, and might be regarded as a sort of monstrous birth. In the present case, however, nothing can be set down to caprice, for that singular pair of tawny flowers is found, as represented in the Plate, at the base of every spike!

This wonderful Orchid is a native of Borneo, whence it was originally sent to the late Mr. Low, of the Clapton Nursery, by his son (Colonial Treasurer at Labuan), in whose honour the species was named by Dr. Lindley. It has also been imported by Messrs. Veitch, in whose nursery at Chelsea I first had the pleasure of seeing the plant in bloom. It was not however until the autumn of the year 1862, when the species flowered in Mr. Rucker's collection (where the drawing was made), that any adequate idea could be formed of its beauty. A full account was published in the 'Gardeners' Chronicle' at that time, which would apply equally to Mr. Rucker's plant as it might have been seen in September, 1864, when it again burst into flower, and if possible in greater beauty and profusion than before.

I gather from a memorandum received from Mr. Pilcher, Mr. Rucker's gardener, that the Wandsworth plant is nine feet high, and that it produced six spikes, each bearing from forty to fifty flowers, which lasted in perfection for a month. The spikes attained to such an extraordinary length that they had to be supported on props, and thus formed graceful festoons, under which a person might walk! The plant requires the heat of the East Indian house, and grows so freely that it seems almost to chafe at the comparatively narrow scope which the low roofs of modern Orchid-houses afford it.

Dr. Lindley, who had only seen the specimens originally sent from Borneo, referred the plant to *Vanda*, but Reichenbach, who more recently had the advantage of examining living flowers, is decidedly of opinion that it falls more properly under the genus *Renanthera;* and as in this case I quite concur in the view of the German Professor, I have not hesitated to substitute the name of *Renanthera* for that of *Vanda Lowii*.

Descr. *Stems* caulescent, an inch thick, climbing to a great height, and bearing numerous leathery strap-shaped obliquely-obtuse *leaves* eighteen inches to three feet long. *Flower-spikes* hanging down, issuing from the upper portions of the stems, slightly hairy, attaining the length of from six to twelve feet, and bearing from thirty to fifty flowers. *Flowers* of two kinds on the same spike, the lowest two, or rarely three, being always of a tawny-yellow colour enlivened with crimson dots, while the remainder are of a pale green, almost hidden on the inner side by large irregular blotches of reddish-brown. On the ordinary flowers the *sepals* and *petals* are waved lanceolate and acute, but on the lower pair they are shorter and blunter and more fleshy. *Lip* less than half the length of the sepals, very fleshy, ovate, beaked with a small horn in front and five parallel ridges along the disk of the interior. *Column* very short and blunt.

Fig. 1. Reduced view of plant in flower. 2. Leaf,—*nat. size*. 3. Portion of flower-spikes, ditto. 4. Side view of lip and column. 5. Front view of ditto. 6. Pollen-masses:—*magnified*.

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 162.

TRICHOPILIA TURIALVÆ.

The Turialva Trichopilia.

Gen. Char. (*Vide supra*, Plate 115.)

Trichopilia *Turialvæ;* sepalis petalisque lineari-ligulatis acuminatis, labello cuneato flabellato trilobo, lobis lateralibus obtusatis dilatatis, lobo medio reniformi bilobo angustiori, carinis nullis, labelli ungue cum columnâ basi connato, androclinii cucullo bene fimbriato, lobis lateralibus paullo brevioribus, foveâ basin versus angustiori, basi retusâ, antheræ carinâ humili loculis breviori. *Rchb. fil.*

Trichopilia Turialvæ. *Rchb. fil. in Otto Hamb. Gartenz. v.* 19, 1863, *p.* 11. *Gard. Chron. Aug.* 19, 1865, *p.* 770.

The true Trichopilias seem to be almost exclusively confined to that remarkable isthmus, so rich in Orchids, which connects the northern and southern portions of the vast American continent. They are especially numerous on the mountain ranges of Veraguas where, as its name implies, the present species was found on the slopes of the snow-capped Turialva.* Professor Reichenbach, by whom it was first described, thus speaks of the plant in the 'Gardeners' Chronicle' (Aug. 19, 1865, p. 770), "a species in the way *T. albida*, Wendl. fil.; *T. oicophylax*, Rchb. fil.; and *T. maculata*, Rchb. fil.; none of which can boast much beauty. The erect fimbriate membrane surrounding the anther reminds one of an old-fashioned, stiff, erect, lady's collar. The flower is yellowish-white, the lip deeper yellow. It was discovered by Mr. Wendland. the son (or rather the grandson, since he is already the third of the Wendlands), on the volcano Turialva, in Central America. Later it was also observed by a traveller named Sell." I would add that in its colouring and general appearance it is not unlike the *T. picta* of Lemaire.

Judging from the specimens I have examined, the species seems to vary considerably in the size and tinting of its blossoms. Mr. Fitch's drawing was taken from a plant exhibited in July, 1864, at South Kensington, by Mr. Williams, of the Paradise Nursery. Like the rest of the genus, it is very easily managed, provided it be not kept

* The name of the mountain (literally "white tower") was given to it by the Spaniards to describe its remarkable appearance from the sea.

too warm. Trichopilias, however, can scarcely be reckoned amongst "cool" Orchids in the extreme sense of the term, requiring as they do, a temperature considerably higher than would suffice for many of the most popular Odontoglossa.

Fig. 1. Column—*magnified.*

W Fitch, del et lith

Vincent Brooks, Imp.

Plate 163.

EPIDENDRUM MYRIANTHUM.

Many-flowered Epidendrum.

Gen. Char. (*Vide supra*, Plate 109.)

Epidendrum (Amphiglottium, *Lindl.*) *myrianthum ;* foliis lineari-lanceolatis acutis vaginis nigro-punctatis, paniculæ compositæ effusæ ramis divaricatis, bracteis setaceis, pedicellis ovariisque longissimis, sepalis membranaceis oblongis obtusis, petalis lineari-spathulatis, labello longiore 4-partito bicalloso laciniis truncatis linearibus æquilongis recurvis lateralibus subintegris, intermediis apice tantum laceris, clinandrio utrinque obtuso, appendice dorsali membranaceâ cucullatâ bifidâ. *Lindl.*

Epidendrum myrianthum. *Lindl. Fol. Orch.*

This most charming Epidendrum was discovered many years ago by Mr. Skinner at a very high elevation on the mountains of Guatemala, and a few of the specimens that he transmitted to this country have lingered in our collections but—owing no doubt to their having been kept too warm—could never be induced to flower. As one of these happened to be still alive at Knypersley, though its shoots were no thicker than a crowquill, I directed it to be put in a cool house, in which some of the old and feeble stems speedily blossomed, and new shoots, thrice the strength of the others, almost immediately presented themselves. When these are sufficiently advanced, I have no doubt that masses of flowers will be produced, equal to the dried specimens preserved in the Lindleyan Herbarium (now at Kew), and which have assisted Mr. Fitch in preparing the representation on the opposite page.

The plant flowered in June, 1866, in one of the cool houses at Knypersley, and continued long in beauty. Some idea of its habit may be gathered from the reduced sketch in the Plate. The stems are a yard or more high.

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 164.

TRICHOPILIA FRAGRANS.

Fragrant Trichopilia.

Gen. Char. (*Vide supra,* Plate 115.)

Trichopilia *fragrans;* pseudobulbis oblongo-lanceolatis elatis compressis, foliis solitariis latis pedunculis 3–5-floris nutantibus brevioribus, bracteis lanceolatis erectis, sepalis petalisque oblongo-lanceolatis acuminatis, labello oblongo subtrilobo lævi.

Trichopilia fragrans. *Reichenb. Walpers' Ann. v.* 6. *p.* 680.

Pilumna fragrans. *Lindl. Bot. Reg. v.* 30, 1844, *Misc.* 74. *Bot. Mag. t.* 5035.

Trichopilia candida. *Linden, Hort.*

The discovery of several new species of *Trichopilia,* as well as others of the so-called genus *Pilumna* of Lindley, proves beyond a doubt that the two genera can no longer be kept apart, and I have therefore adopted, without hesitation, Professor Reichenbach's change of *Pilumna fragrans* into *Trichopilia fragrans.* It is a pretty sweet-smelling plant from Popayan, flowering, under cool treatment, freely enough in the spring. Lady Dorothy Nevill contributed the specimen figured in the Plate, from her famous collection at Dangstein.

Descr. *Pseudobulb* oblong, four to six inches long, subterete or slightly compressed, smooth, monophyllous, sheathed at the base with three or four large faintly striated membranaceous *scales.* *Leaf* oblong-lanceolate, six to eight inches long, acute, smooth, veinless, rather fleshy and opaque. *Peduncle* arising from the base of the pseudobulb, pendent, about a foot long, including the *flowers:* these are large, handsome, four or more in a bracteated *raceme.* *Bracteas* ovato-oblong, acute, withering. *Pedicels* two inches long, but gradually passing into the club-shaped, three-furrowed ovary. *Sepals* and *petals* nearly uniform, long (two and a half to three inches), very much spreading, linear-lanceolate, acuminate, slightly twisted. *Lip* very large, the lower part of the *claw* united to the column; the rest involute, so as to enclose the column; from the claw the *limb* suddenly expands so as to be very large, almost

orbicular, obscurely three-lobed, pure white, with an orange spot at its base on the disc. *Column* terete and club-shaped. *Clinandrium* with two rounded entire ears in front, at the back three-lobed and fimbriated. *Anther-case* operculiform. *Pollen-masses* two, with a caudicle and linear *gland*.

Fig. 1. Column. 2. Pollen-masses :—*magnified*.

W. Fitch, del. et lith

Vincent Brooks. Imp

Plate 165.

ONCIDIUM LONGIPES.

Long-stalked Oncidium.

Gen. Char. (*Vide supra*, Plate 154.)

Oncidium (Tetrapetala, Macropetala) *longipes;* pseudobulbis ovalibus diphyllis, foliis angustis tenuibus, scapo bi-(pluri-)floro foliis æquali, pedunculis elongatis, sepalis lateralibus elongatis pendulis basi connatis dorsali breviore latiore refracto, petalis oblongis planis, labelli lobis lateralibus parvis obtusis intermedio transverso apiculato sinu convexo serrato, cristâ pubescente depressâ basi simplici truncatâ, papillâ utrinque adpressâ apice 3-lobâ, columnæ alis minimis sinuatis. *Lindl.*

Oncidium longipes. *Lindley in Paxton's Fl. Garden, v.* 1, *n.* 76. *Folia Orchid. Oncid. p.* 15, *n.* 45.

Oncidium Janeirense. "*Reichenb. fil. in Bonpl. Ap.* 1, 1854."

A Brazilian plant, introduced by Messrs. Loddiges from Rio Janeiro. It is a bright and pretty, though diminutive species, easily cultivated on a piece of hard wood or (better still) a branch-orchid pot, and flowering in the early summer months. Its blossoms are very durable.

Descr. From a creeping *caudex*, about as thick as a writing-pen, pseudobulbs arise in clusters, oblong, tapering upwards, sheathed with brownish scales, bearing two linear, apiculated, somewhat fleshy *leaves*, linear-oblong, tapering much at the base, apiculate at the point, bright green. *Peduncle* or *scape* slender, arising from between the leaves, bearing a *raceme*, three to four inches long, of several long-pedicellate *flowers*. *Sepals* and *petals* all spreading, dark, almost blood-red-brown within, brownish-green on the outside; superior or dorsal *sepal* spathulate, the margins waved and reflexed, lateral sepals narrower, united at their base, deflexed. *Labellum* large in proportion to the size of the flower, bright, almost golden-yellow, with a broad blood-coloured ring at the base surrounding the crest, three-lobed, lateral lobe small rounded, terminal one large and two-lobed; the margin fimbriated between the principal lobes.

Crest a slightly downy, elevated, oblong, fleshy disc, lobed at the margin, whitish, and spotted; the apex with three teeth or small lobes, the two inferior curved and subspiniform. *Column* rather short, with two small wing-like lobes beneath the anther.

Fig. 1. Front view. 2. Lateral view of a flower.—magnified.

W. Fitch, del. et lith

Vincent Brooks Imp.

Plate 166.

DENDROBIUM EBURNEUM.

Ivory-flowered Dendrobium.

Gen. Char. (*Vide supra*, Plate 102.)

Dendrobium *eburneum;* caulibus erectis brevibus robustis foliosis villis deciduis sparse vestitis, foliis coriaceis lanceolatis oblique obtusis, racemis lateralibus vel terminalibus 2–9-floris foliis brevioribus, sepalis petalisque subæqualibus lanceolatis acutis, labelli trilobi lobis lateralibus brevibus rotundatis, intermedio triplo longiore lanceolato apiculato margine crenulato, mento horizontali sepalis vix æquali.

Dendrobium eburneum. *Reichenb. fil. mss.*

This fine *Dendrobium* was found in Moulmein by Mr. Parish, associated with *D. formosum* and other species with which we are now familiar. Messrs. Hugh Low and Co. received living plants of it in 1862, and one of these having been seen in flower by Professor Reichenbach, he at once distinguished it under the characteristic name of *D. eburneum*. The flowers have exactly the appearance of polished ivory, which is relieved by lines of dark Roman red, which occupy the lower portion of the disk of the lip and the base of the column. It flowers in the spring, and is of easy culture, requiring, however, a warm situation during its season of growth and flowering.

Fig. 1. Flower, from which the sepals and petals are removed. 2. Front view of the column and spur. 3. Pollen-masses :—*magnified*.

W. Fitch, del. et lith

Vincent Brooks, Imp

Plate 167.

ODONTOGLOSSUM CORDATUM.

Heart-shaped Odontoglossum.

Gen. Char. Perianthium explanatum, æquale; sepalis petalisque angustis acuminatis liberis. *Labellum* indivisum, ecalcaratum, unguiculatum: ungue cum basi columnæ continuo; lamina patente basi cristata. *Columna* erecta, membranaceo-marginata, apice utrinque alata. *Anthera* bilocularis. *Pollinia* 2, solida, caudicula lineari, glandula hamata.—Herbæ *epiphytæ, pseudobulbiferæ.* Folia *plicata.* Scapus *terminalis, vaginatus.* Flores *speciosi. Lindl.*

Odontoglossum *cordatum;* pseudobulbis oblongis compressis 1 vel 2-phyllis, foliis lato-oblongis planis acutiusculis, racemis strictis multifloris brevioribus, bracteis navicularibus acuminatis membranaceis ovario multo brevioribus, sepalis lineari-lanceolatis acuminatis discoloribus, sepalis petalisque lineari-lanceolatis acuminatissimis, labello cordato acuminatissimo integerrimo appendice unguis carnosâ apice bilobâ basi utrinque dente uniclâ auctâ, columnâ pubescente clavatâ sub-apterâ. *Lindl.*

Odontoglossum cordatum. *Lindl. Bot. Reg.* 1838, *Misc.* 90. *Knowles & Westcott, Flo. Cab. t.* 100: *Pescatorea, t.* 25. *Hook. B. M. t.* 4878 (*sub* O. maculato).

Odontoglossum maculatum. *Bot. Mag. non Lindley.*

From the Orchideous house at Kew, where it bears its long pendent spike of curious flowers in August. It is a native of Mexico, imported thence by Count Karwinski, who has the credit of its discovery. It was also met with abundantly in Guatemala by Mr. Skinner. It requires the Mexican house.

Descr. The specific character above given suffices for its distinction from other species. The *pseudobulbs* are rather small, clustered, oblong, compressed, green, and subtended by herbaceous scales. *Leaves*, one or two terminal on the bulb, oblong, lanceolate, somewhat acute, subcoriaceous. *Scape* elongated, from the base of the pseudobulbs, bracteated. *Spike* neat, six- to ten-flowered. *Flowers* large, handsome. *Calyx* of three lanceolate, spreading, much acuminated *sepals*, deep yellow, blotched with rich brown, uppermost sepal the largest and longest. *Petals* spreading, of the same shape, but broader and shorter, more regularly spotted. *Lip* large, spreading, white, with reddish blotches. *Column* down.

Fig. 1. Column and base of the lip. 2. Pollen-masses :—*magnified.*

W. Fitch, del. et lith

Vincent Brooks, Imp

Plate 168.

PHALÆNOPSIS LOWII.

Mr. Low's Phalænopsis.

Gen. Char. (*Vide supra*, Plate 114.)

Phalænopsis *Lowii;* radice crasse fibrosâ, foliis paucis oblongis acutis carnosis, scapo gracili subspithamæo 4–5-floro, bracteis minutis ovatis acutis, floribus remotis albis roseo-tinctis, sepalo superiore late ovato acuto, lateralibus oblongis, petalis latissime cuneatis obtusissimis, labello parvo longitudine sepalorum lateralium trilobo, lobis lateralibus brevibus linearibus reflexis, intermedio oblongo purpureo lineato medio carinato apice eroso, basi cristato, rostello longe proboscideo.

Phalænopsis Lowii. *Reichenb. fil. in Bot. Zeit.* 1862, *n.* 27. *p.* 214.

A most lovely species of *Phalænopsis* from Moulmein, discovered by the Rev. C. S. P. Parish, for the introduction of which to Europe (in 1862) we are indebted to Messrs. Low and Son, of the Clapton Nursery. It is one of about a dozen species of *Phalænopsis* that are now in our stoves, and many more are doubtless still to come. If the flowers of this species fall short in size and purity of white of those of the well-known *Phalænopsis amabilis*, it compensates for these deficiencies in the delicate rose-tints of the petals and labellum; and the shape of the lip and of the rostellum are very remarkable—that of the latter quite resembling the head and long beak of a bird, as may be seen in the figures. The nearest affinity of the species is with *Phalænopsis rosea*, Lindl., given in Bot. Mag. t. 5212; but the two are quite different.

It is a rare and rather tender plant, and prone to injure itself by excessive flowering. The leaves, too, will sometimes fall off, though without destroying the plant, especially if the house in which it is grown be not sufficiently close and damp. To guard against this danger, it is sometimes grown under a hand-glass. It usually flowers in the winter months, in the East Indian house.

Fig. 1. Side view of the column, rostellum, and labellum. 2. Front view of the same:—*magnified.*

W. Fitch, del et lith.

Vincent Brooks, Imp

Plate 169.

DENDROBIUM BIGIBBUM.

Double-spurred Dendrobium.

Gen. Char. (*Vide supra*, Plate 105.)

Dendrobium (§ Dendrocoryne) *bigibbum ;* caulibus elongatis apice 3–5-phyllis, racemis erectis elongatis dissitifloris, petalis subrotundis sepalis duplo latioribus, labelli trilobi lobis rotundatis medio cristato basi gibboso, sepalis lateralibus in calcar productis. *Lindl.*

Dendrobium bilobum. *Paxt. Fl. Garden, v.* 3. *p.* 25. *n.* 491. *fig.* 245 (*woodcut only*).

A species of *Dendrobium* with very handsome flowers ; but the long, slender, bare pseudobulbous stems, and few and narrow sparse leaves which occur in some varieties, detract from the general beauty of the plant. We are indebted for the specimen here figured to Mr. C. Loddiges, who forwarded it to the artist, in November, 1855 ; he had received the plant from Dr. Thomson, who discovered it on Mount Adolphus, Torres' Straits, on the north-east coast of New Holland. In consequence of this tropical locality, it requires greater heat in the cultivation than most Australian *Orchidea*, but is very easily managed. A drawing, made on the spot and dried specimens show that from ten to twelve flowers are sometimes found upon one peduncle. They last long in beauty, and are freely produced in the winter and spring months. *D. Hillii*, *D. Tattonianum*, *D. Johannis* all come from the same locality, and may be associated with it in cultivation. They form a very interesting group.

Descr. *Pseudobulbs* stem-like, long, slender, fusiform, a span or more in length. the younger ones clothed with green, sheathing, foliaceous *scales*, and at the extremity bearing two to four or five narrow, linear-oblong, subacuminated, very obscurely striated *leaves*. The *older* stems or pseudobulbs are swollen at the very base, and are sheathed throughout the length with pale, brownish, membranaceous, striated *scales*, and have no leaves. From these older stems the *peduncle* arises from near the apex, and is about as long as the stem, erect, in the present instance, two- to ten- or twelve-flowered. *Flowers* deep lilac. *Sepals* ovate, spreading ; two lateral ones terminating below in a short, blunt, curved spur ; above this spur is a gibbosity, occasioned by the like swelling at the base of the lip : from the presence of this and the spur is derived the specific

name *bigibbum*. *Petals* large, nearly orbicular, horizontally patent. *Lip* deeper-coloured than the rest of the flower, three-lobed: *lateral lobes* large, incurved; *middle lobe* moderately reflexed, retuse at the apex: the disk has a large, elevated, white *crest*, papillose for the greater part of its length: the base is decurrent, and forms a gibbosity. *Column* large, compressed, grooved, the back closely united with the sepal, the *clinandrium* only standing a little forward.

Fig. 1. Side view of the lip, and spur of the sepals. 2. Front view of the lip. 3. Column 4. Pollen-masses.

W Fitch. del et lith

Vincent Brooks, Imp

Plate 170.

ORCHIS FOLIOSA.

Leafy Orchis.

Gen. Char. Flores galeati. *Sepala* subæqualia; supremum cum petalis in fornicis speciem connivens; lateralia nunc convergentia, nunc reflexa. *Petala* erecta, sepalo subæqualia. *Labellum* anticum, calcaratum, integrum v. indivisum, cum basi columnæ connatum. *Anthera* erecta, loculis contiguis parallelis. *Glandulæ* polleniorum 2, distinctæ, cucullo communi (*i.e.* plicatura cucullata stigmatis s. rostelli) inclusæ.—Herbæ *terrestres*, radicibus *tuberculiferis*, foliis *plerisque radicalibus tactu mollibus subsucculentis sæpe maculatis. Lindl.*

Orchis *foliosa ;* foliis oblongo-lanceolatis acuminatis laxe vaginantibus, spica oblonga multiflora, sepalis ovatis acutis, labello latiore quam longo obsolete trilobo plano, laciniis lateralibus emarginatis intermedia acuta multo majoribus, calcare pendulo cornuto labello duplo breviore, bracteis herbaceis acuminatis flore sæpe longioribus, tuberculis palmatis. *Lindl.*

Orchis foliosa. *Soland. mss. in Herb. Banks. Lowe, Primit. Fl. Mader. p.* 13. *Lindley, Bot. Reg. t.* 1701 ; *Sert. Orchid. t.* 44.

This fine *Orchis* is a good deal allied, it must be confessed, to our *Orchis latifolia*, but nevertheless truly distinct; differing, as Dr. Lindley assures us, in being larger in all its parts, having a distinctly three-lobed, flat lip, instead of a lozenge-shaped convex one, a shorter and more slender spur, and a taller stem. It is a species peculiar to the island of Madeira, and is found, according to the Rev. Mr. Lowe, in rocky banks of Ribeiro Frio, amongst grass and bushes of *Spartium candicans*, at an elevation upon the hills of 3000 feet. Mr. Lowe gathered one native specimen which measured two feet seven inches in height. It should be grown in a cool greenhouse, in a large pot filled with fibrous peat. It flowers freely in May, and when in a large moss is exceedingly ornamental.

Descr. *Tubers* palmated. *Stem* and *foliage* resembling greatly those of *Orchis latifolia*, spotless. *Bracteas* leafy among the flowers, but generally shorter than they. *Spike* ovate or oblong-ovate, three inches broad, bearing numerous purple flowers. *Sepals* erecto-patent, ovate, obtuse, nearly plane, palish-purple. *Petals* similar in form, but narrower and smaller, nearly erect, dark-purple. *Lip* pendent, very broad, rotun-

dato-cuneate, three-lobed, middle lobe the smallest: the *colour* purple, with darker blotches of the same colour. *Spur* a good deal shorter than the lip, purple, with darker blotches.

Fig. 1. Flower. 2. Column, anther, and base of the lip, with the spur :—*magnified.*

W. Fitch, del. et lith.

Plate 171.

PHALÆNOPSIS SCHILLERIANA.

Schiller's Phalænopsis.

Gen. Char. (*Vide supra*, Plate 114.)

Phalænopsis *Schilleriana;* foliis zebrinis oblongis obtusis paniculâ multiflorâ nutante brevioribus, sepalo dorsali obovato obtuse acuto, lateralibus ovatis acutioribus, petalis rhombeis multo latioribus, labelli lobis lateralibus oblongis ascendentibus, intermedio ovali apice utrinque bifalci, callo quadricorni in basi.

Phalænopsis Schilleriana. *Rchb. fil.* '*Xenia Orchidacea,*' *t.* 101. *Id. in Hamb. Gartenzeitung,* 1860. *p.* 144. *Lindl.* '*Gardeners' Chronicle,*' 1860, *p.* 216; 1861, *p.* 617; 1862, *p.* 95. *Warner's* '*Select Orchidaceous Plants,*' *pl.* 1. *Lemaire, in Illus. Hort.* 1863, *pl.* 348.

As in the case of the *Phalænopsis* figured at Pl. 114, the honour of having been the first to introduce and to flower the subject of the opposite Plate rests with the Continental Orchid-growers. And it is one of which they may well be proud, for no species of the lovely genus to which it belongs—no, not even *P. amabilis* itself—can at all be compared with it in beauty. In dedicating it under these circumstances to his distinguished countryman, Consul Schiller, of Hamburg, Professor Reichenbach paid a well-merited compliment to one whose collection of Orchids has long been renowned, and still maintains its celebrity.

There are many varieties, which differ from each other in the marbling of the leaves, and in the size and tinting of the blossoms. Those which first appeared among us scarcely gave a fair idea of the effect the plant is capable of producing when the best kinds have attained their proper vigour. Mr. Williams, of Holloway, mentions his having imported a plant on which was a native flower-stem that had borne a hundred blossoms, and that number has been already exceeded in the case of a spike borne by one of the plants in Mr. Gibb's collection at St. Dunstan's, in the Regent's Park. As the plant is found at a higher level in the Philippines than *P. amabilis*, it need not be kept quite so warm, but under almost any circumstances it grows well and blooms freely in the winter and spring.

The figure was taken from a glorious specimen that flowered in the nursery of Mr. Veitch, in May, 1865. In the size of its blossoms and the delicacy of its tints, this variety eclipses all that have as yet shown themselves.

Descr. *Leaves* from six to eighteen inches long, oblong and coming to a blunt point, beautifully marbled on the upper side with irregular whitish streaks on a dark-green ground, the under side being purple. *Peduncle* one to three feet long, bent downwards, branched, many-(10–100-)flowered, all the flowers being open at the same time. *Sepals* an inch or more long, the dorsal one obovate and rather sharp-pointed, the lateral ones ovate and more acute. *Petals* of a rhomboid form, much wider than the sepals, and, like them, of a rich rosy-lilac colour, becoming fainter or almost white at the edges. *Lip* three-lobed, the lateral lobes white, oblong, rounded, and stretching backwards, with a four-cornered yellow callosity at their base; the middle lobe rosy-lilac, oval, and split at the summit into two slender portions, that diverge from each other and are gracefully curved. *Column* blue, clavate, prolonged, and free at the base.

Fig. 1. Lip and column :—*slightly magnified*.

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 172.

BATEMANNIA GRANDIFLORA.

Large-flowered Batemannia.

Gen. Char. Flores ringentes. *Sepala* patentia, lateralia unguiculata, basi æqualia. *Petala* sepalis latiora, basi obliqua, pedi producto columnæ adnata. *Labellum* cum columnâ articulatum, trilobum, cucullatum. *Columna* semiteres, basi elongata, clinandrio marginato. *Anthera* parva, bilocularis, membranacea. *Pollinia* 2, postice biloba, glandulâ triangulari, caudiculâ nullâ. *Lindl. Bot. Reg. v.* 20. (1835) *p.* 1714.

Batemannia *grandiflora;* pseudobulbis ovatis lucidis diphyllis, foliis valde coriaceis lanceolatis acutissimis racemis basilaribus 2–5-floris 3-plo longioribus, sepalis exterioribus liberis lanceo-latis acutissimis patentibus æqualibus, internis paulo minoribus subcarnosis basi latis, labello brevissimè unguiculato, basi gynostemii producti articulato subconcavo trilobo, lobo medio majori fimbriato, apice longe acuminato. Columna arcuata, margine membranaceo, alis trun-catis denticulatis. Anthera operculiformis 2-locularis. Stigma concavum, rostello acuto, glandulâ ovali antice attenuatâ. Pollinia 4 per paria superposita compressa. *Rchb. fil. Bonpl.* 1856. *v.* 4. *p.* 323, *et in Walpers' Annales.*

Galeottia grandiflora. *Rich. et Gal. l. c. et tab.* 27.

The genus *Batemannia* was so named by Professor Lindley, upwards of thirty years ago, after the writer of these remarks. The original species, *B. Colleyi*, came from Demerara, and a second, *B. Beaumonti*, from Bahia, and with these Professor Reichen-bach has now associated two species of the supposed genus *Galeottia* (*G. fimbriata* and *G. grandiflora*), which agree well with *Batemannia*, except that the number of pollen-masses is four instead of two. A fifth species has been added under the name of *B. meleagris* (the *Huntleya meleagris* of Lindley), which, though I quite think my friend is right in removing it from *Huntleya*, I am convinced he is wrong in placing under *Bate-mannia*, with which its habit—more like that of an Eastern Vanda—does not at all accord.

The present species is a very handsome plant, introduced many years since by Linden from New Granada, but still extremely rare. The figure was taken from specimens produced in the spring of 1865, in Mr. Rucker's far-famed collection. Being found at a lower elevation (4000 ft.) than the majority of its tribe in New Granada, it requires rather more warmth than most of what are now denominated "cool" Orchids.

Descr. *Pseudobulbs* ovate, deeply furrowed, shining, two or three inches long, bearing two large, broadly-lanceolate, very sharp-pointed, leathery *leaves*. *Flower-scapes* much shorter than the leaves, three- to five-flowered. *Sepals* free, lanceolate, very sharp-pointed, fully expanded, all of the same size, olive striped with reddish-brown. *Petals* rather smaller, slightly fleshy, broad at the base. *Lip* with a short claw, jointed with the extended base of column, rather hollow, three-lobed, its middle lobe largest, fringed, and very acuminate, white with purple streaks, and orange-coloured calli at the base. *Column* arched, with membranous edges, and truncate, toothleted wings. *Anther* two-celled. *Stigma* hollow, with sharp beak and oval gland narrowing to a point in front. *Pollen-masses* four.

Fig. 1. Pollen-masses :—*magnified*.

W.Fitch.del.et lith.

Plate 173.

DENDROBIUM ALBO-SANGUINEUM.

White-and-sanguine Dendrobium.

Gen. Char. (*Vide supra*, Tab. 102.)

Dendrobium (§ Stachyobium) *albo-sanguineum;* caulibus crassis erectis foliosis, racemo terminali 4–5-floro, bracteis squamæformibus, sepalis oblongo-lanceolatis lateralibus in mentum breve obtusum productis, petalis ovalibus obtusis pluries latioribus, labello obovato subrotundo plano retuso apiculato integerrimo. *Lindl.*

Dendrobium albo-sanguineum. *Lindl. in Paxton's Flower Garden, v.* 2. *t.* 5. *Bot. Mag. t.* 5130.

This is one of the most beautiful species of the entire genus, rich as it is in lovely plants! It is a native of Moulmein, and flowers in the spring months, producing very freely its racemes of rich creamy-white and purple blossoms. It should be grown in a shallow pan or wire-basket, suspended from the rafters, and should have abundance of heat and moisture during its season of growth. Messrs. Veitch were its original importers.

Most varieties are very superior in beauty to the one here presented.

Descr. Caulescent, forming elongated, terete, jointed, nearly erect *stems*, rather than pseudobulbs, a foot and more long, leafy at the extremity. *Leaves* five to six or seven inches long, subdistichous, lineari-lanceolate, sheathing at the base. *Peduncle* not so long as the leaves, erect, slender, clothed with short, sheathing scales, and bearing five to seven rather large yellowish-white *flowers*, each about three inches broad. *Sepals* spreading, oblong-lanceolate, the two lateral ones at their base forming a short, conical, straight *spur*. *Petals* oval, twice as broad as the sepals, very obtuse, with a few sanguineous streaks at the base. *Lip* large, nearly obovate, subunguiculate, veined and a little waved, quite entire, plane, blotched and streaked near the base with deep blood-purple. *Column* short, in front and on the *anther* streaked with purple, decurrent at the base.

Fig. 1. Labellum. 2. Column. 3. Pollen-masses:—*magnified.*

W. Fitch. del. et lith.

Vincent Brooks Imp.

Plate 174.

LUISIA PSYCHE.

Butterfly-flowered Luisia.

Gen. Char. Sepala herbacea, linearia, lateralibus labello suppositis, dorsali minore. *Petala* dissimilia, tenuiora, sæpius longiora, patentissima vel fornicata. *Labellum* indivisum, sæpius auriculatum, cum columnâ continuum, dependens, inappendiculatum, nunc convexum, nunc concavum et medio constrictum. *Columna* nana, carnosa, apoda. *Stigma* anticum, circulare, rostello obtuso obsoleto. *Pollinia* 2, cereacea, postice excavata; caudiculâ latâ brevi triangulari, glandulâ membranaceâ replicatâ. *Anthera* subrotunda, 2-locularis, valvulis macilentis.—Herbæ *epiphytæ, caulescentes, erectæ, junceæ, Asiæ et Americæ tropicæ.* Folia *teretia, rigida.* Flores *parvi, obscure virides vel purpurascentes. Lindl.*

Luisia *Psyche;* foliis teretibus crassis, spicis brevissimis paucifloris, sepalo dorsali ligulato-fornicato, lateralibus angustioribus per dorsum carinatis, petalis cuneato-oblongis subacutis, labello basi utrinque auriculato, ante auriculas a basi utrinque minute semicordato transverse obovato subacuto, limbo minute lobulato. *Rch. fil. in Gard. Chron.*

Luisia Psyche. *Reichenb. fil. in Mohl et Schlecht. Bot. Zeit.* 1863, *p.* 98, *et in Gard. Chron.* 1865 ('New Plants,' n. 312). *Bot. Mag. t.* 5558.

The genus *Luisia* consists almost exclusively of inconspicuous, taper-leaved plants, with much the habit of *Vanda teres.* There are, however, a few exceptions to the above rule, the most remarkable of which are an unintroduced plant (the *Luisia volucris* of Lindley) the flowers of which resemble birds with narrow outspread wings, and the species now figured for the first time, whose singular blossoms have quite an insect-like character.

It was discovered in Burmah by the Rev. C. S. Parish, by whom a few living specimens were sent to Messrs. Hugh Low and Co., of the Clapton Nursery. It is well described by Prof. Reichenbach, both in the 'Botanische Zeitung' of 1863, and in the 'Gardeners' Chronicle' of 1865. It grows slowly, but is easily managed, and flowers freely during the spring and summer.

Descr. *Plant* about a foot high. *Leaves* thick, round and tapering, six inches long. *Flowers* produced, two or three in succession, on a very short spike. *Sepals* and *petals* a pale yellowish-green, the dorsal sepal being more concave and broader than the side sepals, which are ligulate, keeled along the back, and blunt at their extremities, and not half the length of the petals; the latter, which hang down like the ears of a rabbit, are more than an inch long, cuneate-oblong, and rather sharp at the end. *Lip* not so long as the petals, fleshy, convex, with two auricles at its base, the portion above which is transversely obovate, and slightly cordate, its disk is beautifully marked—after the manner of some species of *Ophrys*—with dark violet-purple spots on a green ground. *Column* very dwarf.

Fig. 1. Front view of flower. 2. Pollen-masses :—*magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 175.

CATTLEYA LINDLEYANA.

Dr. Lindley's Cattleya.

Gen. Char. (*Vide supra*, Plate 108.)

Cattleya *Lindleyana;* pseudobulbis cauliformibus elongatis aggregatis teretibus articulatis, articulis bracteato-spathaceis albidis mono-diphyllis, foliis lineari-lanceolatis, floribus binis vel solitariis terminalibus sublonge pedunculatis, sepalis lineari-lanceolatis, petalisque iis latioribus albis, labello amplo obscure trilobo albo pallide luteo purpureoque tincto, lobo intermedio subrotundo concavo medio lineâ purpureâ maculato.

Cattleya Lindleyana. *Batem. in Herb. Hook.*

Lælia Lindleyana. *Hort.*

This remarkable *Cattleya* was sent to Kew from Bahia, by C. H. Williams, Esq., in 1863. In aspect it much resembles a *Brasavola*, but it is nevertheless a true *Cattleya*. The flowers, of which there are rarely more than one on a stem, are produced in the autumn, and last a long time. It requires the utmost heat of the Cattleya-house, in which it soon forms a neat compact bush.

W.Patch.del.et lith.

Plate 176.

GRAMMATOPHYLLUM ELLISII.

Mr. Ellis's Grammatophyllum.

Gen. Char. Sepala explanata, lanceolata, æqualia. *Petala* majora, paulo difformia, carnosa, explanata. *Labellum* posticum, 3-partitum, lamellatum, circa columnam convolutum. *Columna* aptera, carnosa, antice canaliculata. *Pollinia* 8, caudiculis 4 elasticis. Herbæ *epiphytæ*, rhizomate pseudobulbifero. *Lindl.*

Grammatophyllum *Ellisii;* pseudobulbis angulatis clavato-fusiformibus polyphyllis, foliis latoloratis recurvis basi canaliculatis, racemo multifloro recurvo, sepalis patentibus acutis lateralibus gibbosis, petalis duplo brevioribus oblongis obtusis erectis apice revolutis, labello petalis æquali mobili basi sacculato trilobo jugo medio elevato ultra isthmum 3-lamellato lineisque 3 elevatis arcuatis utrinque, lobo medio ovato acuto lateralibus brevibus subfalcatis, anthera tuberculo pedicellato cristata. *Lindl.*

Grammatophyllum Ellisii. *Lindl. ms. Bot. Mag. t.* 5179.

This fine plant blossomed for the first time in the stove of its introducer, the Rev. William Ellis, who, in a letter addressed to Dr. Lindley, from Hoddesdon (dated August 23rd, 1859), wrote as follows:—"Among the plants which I brought from Madagascar was a large square-bulbed plant, which I found growing on a branch of a tree about the size of a man's leg, and stretching over a river at about twenty-five feet above the water. The roots were abundant, but short, white, fleshy, and matted together, a little larger than the roots of *Ansellia Africana*. The bulbs were seven or eight inches long, and one and a quarter inches square, but last year it made a bulb eleven inches long and nearly two inches wide on each of the four sides. The leaves, of which there are five or six on a bulb, are one and a half to two feet long, about the size, but not so curved as those of *Angræcum sesquipedale*, and less fleshy than those of *A. eburneum*. The flower-spike comes up with the young growth, is about two feet in length, and bears between thirty and forty flowers. Mrs. Ellis has made a coloured drawing of some of the flowers, and a sketch of the whole plant." The specimens produced in Mr. Ellis' stove were communicated to Dr. Lindley, and drew from him the following remarks:—

"The genus *Grammatophyllum* is so nearly allied to *Cymbidium* that the two may possibly be united hereafter. They differ, however, first, in the presence of a sack at

the base of both the column and lip; and, secondly, usually in the pollen-masses of *Grammatophyllum* being attached towards each extremity of a lunate gland. The first of these characters is the more important; the second can only be regarded as subordinate. It is in the first that the plant before us corresponds with *Grammatophyllum*; in the second it approaches *Cymbidium*. As to habit, the first of these two genera includes very dissimilar plants; *G. speciosum* being caulescent, this and *G. multiflorum* being pseudobulbous; a circumstance exactly analogous to what occurs in the great genera *Dendrobium, Epidendrum, Oncidium*, etc."

As a species, *G. Ellisii* is very distinctly characterized by its broad leaves, short petals, gibbous lateral sepals, and smooth lip, which has one stout median rib, separating at the isthmus into three short slender ridges. The anther is moreover crested with a small pedicellate tubercle.

Coming from Madagascar, this plant of course requires the continuous heat of the E. Indian house, in which, if allowed plenty of pot room, it grows vigorously.

Fig. 1, 2. Oblique and front view of a flower, with the sepals removed. 3. Labellum, laid open:—*nat. size*. 4. Front view of the column. 5. Pollen-masses (one cut through transversely):—*magnified*.

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 177.

CYMBIDIUM EBURNEUM.

The Ivory Cymbidium.

Gen. Char. Perianthium explanatum, petalis sepalisque subæqualibus liberis. *Labellum* sessile, liberum, ecalcaratum, concavum, cum basi columnæ nunc articulatum, nunc leviter concavum v. trilobum. *Anthera* bilocularis. *Pollinia* 2, sæpius postice biloba, in glandulam subtriangularem subsessilia. *Lindl.*

Cymbidium *eburneum;* foliis distichis anguste lineari-ligulatis rigidis apice bifidis, lobis acutis, racemo brevi sub-2-floro, squamis elongatis acuminatis imbricatis, floribus amplis obovatis eburneis, sepalis petalisque lineari-oblongis oblongo-lanceolatisve subcarnosis acutis subundulatis, labello oblongo apice trilobo lobis lateralibus rotundatis intermedio triangulari-acuto margine undulato, lamellis in unam mediam incrassatam carnosam auream pubescentem apice tumidam confluentibus.

Cymbidium eburneum. *Lindl. in Bot. Reg. v.* 33, *t.* 67; *Paxton's Magazine, v.* 15. *t.* 145. *Bot. Mag. t.* 5126.

This lovely Orchid was first found by the late Mr. Griffith, who, according to Dr. Lindley's notes on the Orchidology of India, discovered it at Myrung, on the Khasia mountains of East Bengal, where it grows at an elevation of about 5–6000 feet. Fine plants were imported by Messrs. Loddiges, probably from the Calcutta Botanic Gardens, from which Dr. Lindley described the species in 1847. The specimen figured flowered in the Royal Gardens, Kew, in April, 1859, and its scent, which is scarcely so sweet as is usually described, slightly resembled that of starch. It is still a very rare plant. Like most other Cymbidia it will not thrive in a high temperature, but must be considered a 'cool' Orchid. It should be grown in a good-sized pot.

Descr. *Stems* tufted. *Leaves* distichous at the base, very long, linear or lorate, one or two feet long by three-quarters of an inch wide, rather rigid, bifid at the apex, the divisions sharp. *Raceme* very short in proportion to the foliage, four to eight inches long, decumbent or inclined, few-flowered, covered with long, sharp, imbricating *bracts*. *Flowers* large, of a fine ivory-white colour, five to six inches across. *Sepals* and *petals* similar, linear-oblong, acute, scarcely undulate. *Labellum* shorter, with incurved mar-

gins, three-lobed at the apex; the outer lobes rounded, terminal, ovate, crisped or undulate at the margin; a thick, pubescent, golden ridge runs down the centre of the lip, and terminates in a protuberance at the base of the middle lobe.

Fig. 1. Lip. 2. Column. 3. Pollen:—*all magnified.*

W. Fitch, del et lith

Vincent Brooks, Imp

Plate 178.

PHALÆNOPSIS CORNU-CERVI.

Stag's-horn Phalænopsis.

Gen. Char. (*Vide supra,* Plate 114.)

Phalænopsis *cornu-cervi ;* foliis distichis coriaceis cuneatis oblongis, pedunculis lateralibus erectis sursum clavatis multifloris subæqualibus, rachi alatâ, sepalis explanatis carnosis angustis liberis lateralibus subfalcatis leviter incurvis, petalis minoribus conformibus, labello postico unguiculato, in disco foveato, tripartito, laciniis lateralibus runcinatis, terminali lunato apiculato.

Polychilos cornu-cervi. *Kuhl van Hass. Orch. tab.* 1. *Bot. Mag. t.* 5570.

Phalænopsis cornu-cervi. *Rchb. fil. Xen. Orch.*

Although long since discovered in Moulmein by Lobb, this curious plant had never reached England in a living state before the year 1864, when, through the kindness of the Rev. C. S. P. Parish, a few specimens of it were safely transmitted to Messrs. Low, some of which have already flowered.

Dr. Lindley had doubts as to whether *Polychilos* was, as a genus, really distinct from *Phalænopsis*, while Professor Reichenbach is decidedly of opinion that the two genera ought to be combined. Certainly the two species that have lately flowered (*Phalænopsis Luddemanniana* and *P. Sumatrana*), and which are nearly intermediate between the older kinds of *Phalænopsis* and the present, go far to strengthen the views of the German Professor, which on the whole I have thought it better to adopt.

P. cornu-cervi flowers freely in the summer months, and is readily grown among other Indian Orchids. Not more than four or five flowers on the same scape are ever open at the same time.

Descr. An *epiphyte* with the habit of *Phalænopsis*. *Leaves* nearly a span long, distichous, leathery, cuneate, oblong, about equal to the *peduncles*, which are nearly erect, clavate, and forming a broad *rachis*, on which from six to a dozen or more flowers open in succession. *Sepals* expanded, fleshy, narrow, acute, the lateral ones

partially falcate. *Petals* similar to the sepals but rather smaller, of a yellowish-green barred with reddish-brown. *Lip* whitish, unguiculate, hollowed on the disk, continuous with the column, fleshy, folded inwards, tripartite, the lateral divisions being inclined from the apex, and the centre one crescent-shaped and apiculate. By the hollow of the disk is a somewhat cup-shaped membranaceous appendage, usually furnished with five aristæ (awns) and two teeth, one in front, the other in the rear. *Column* erect, elongated, half-rounded, with two tubercles at its base; the clinandrium lying low and flat, with an extended decurved beak.

Fig. 1. Lip and column (*magnified*) seen in front. 2. Ditto, ditto, seen sideways.

W Fitch, del et lith.

Vincent Brooks Imp

Plate 179.

DENDROBIUM AMBOINENSE.

Long-petaled Amboyna Dendrobium.

Gen. Char. (*Vide supra,* Plate 102.)

Dendrobium *Amboinense;* pseudobulbis elongatis gracilibus subfusiformibus, folio solitario oblongo, floribus binis lateralibus, sepalis petalisque uniformibus lineari-lanceolatis longissimis, labello (floris ratione) nano trilobo lobis lateralibus ovato-rotundatis obtusis intermedio subulato.

Dendrobium Amboinense. *Hort. Rollison.*

This remarkable plant, one of the most singular of the many species of the genus *Dendrobium,* was discovered by Mr. Henshall in Amboyna, and imported by Messrs. Rollison, of Tooting Nursery, where it flowered in the Orchideous stove in June, 1856. Most unfortunately, the plant perished shortly after it was figured, and still awaits re-introduction. Few species would be more welcome.

Descr. The leaf-bearing *pseudobulbs* are not more than three to four inches long, fusiform and angular, tapering at the base, the younger ones partially clothed with sub-foliaceous scales; the *leaf* itself terminal, solitary, oblong, acute, scarcely coriaceous, obscurely marked with parallel lines. In age, as it would appear, these *pseudobulbs* lengthen, lose their leaf, and become naked, stem-like, and jointed, tetragonal below, bulbiform at the very base, four- to six-angled above: from this dry, stem-like pseudobulb the *flowers* appear, in pairs, large, cream-white, soon withering. *Petals* and *sepals* scarcely exhibiting any difference in size or in shape, linear-lanceolate, at first spreading, ere long becoming flaccid and closing over the lip. *Labellum* small, in proportion to the rest of the flower, concave, but scarcely spurred at the base below, three-lobed, lateral lobes broad, ovate, obtuse, incurved over the column, the middle lobe subulate: this lip has a yellow tinge, and the middle lobe is edged with a narrow, dark purple line; the concave disc is ocellated with minute, dark orange spots, and there is a pedicellated *gland* or fleshy *tubercle* near the base, and two lesser pairs of *tubercles* nearer the middle lobe. *Column* short, but decurrent where it unites with the base of the lip. *Anther-case* terminal, but sunk into the top of the column, dwarf and imperfect.

Fig. 1. Labellum *in situ,* with the side-lobes enfolding the column. 2. The lip laid open. 3. Column and imperfect anther:—*magnified.*

W Fitch, del et lith

Vincent Brooks imp

PLATE 180.

LÆLIA XANTHINA.

Yellow-flowered Lælia.

Gen. Char. (*Vide supra,* PLATE 128.)

LÆLIA *xanthina*; folio oblongo-lorato coriaceo pseudobulbo fusiformi longiore, racemo 4–5-floro, bracteis obsoletis, sepalis petalisque oblongis obtusis subæqualibus undulatis valde convexis, labello cucullato subquadrato antice obtuse trilobo, venis inappendiculatis. *Lindl.*

Messrs. Backhouse and Son, of the York Nursery, had the honour of introducing this fine and new Brazilian *Lælia*, on which Dr. Lindley (Bot. Register, 1842, t. 62), remarks as follows:—

"This resembles *Lælia flava*, but is far larger and handsomer. It most especially differs in the undulated sepals and petals being leathery and very convex, in consequence of their sides being rolled backwards, and in the form of the lip, which, when spread flat, is nearly quadrate, the front side, which is widest, being divided into three shallow lobes of equal depth, while the lip of *Lælia flava* is deeply three-lobed, the middle lobe being crisp and much longer than the side ones. Moreover, in the plant now before me, the lip has no trace of raised veins, while, on the contrary, in *Lælia flava*, it has four in the middle very conspicuously raised above the general level."

L. xanthina should be grown in the Cattleya-house, in which it is quite at home.

Fig. 1. Labellum. 2. Column and anther. 3, 4. Pollen-masses:—*magnified.*

Plate 181.

GRAMMATOPHYLLUM SPECIOSUM.

Showy Grammatophyllum.

Gen. Char. (*Vide supra*, Plate 176.)

Grammatophyllum *speciosum;* scapo multifloro pseudobulbisque longissimis, foliis distichis patenti-recurvis basi dilatatis equitantibus, bracteis herbaceis, sepalis petalisque patentissimis subobovato-oblongis undulatis obtusissimis, labelli lobis obtusis intermedio rubro-lineato, lineis ciliatis.

Grammatophyllum speciosum. *Bl. Bijdr. p.* 377. *Lindl. Gen. et Sp. Orchid. p.* 173. *Bl. Rumphia, v.* 4. *p.* 47. *t.* 191. *Paxt. Fl. Gard. t.* 69 (*imperfect specimen*).

Great was the surprise of botanists and horticulturists when the first knowledge of this gigantic Orchideous plant was placed before the European public in the 'Rumphia' above quoted, and expectations were not disappointed when the living plant was introduced by the late Messrs. Loddiges, and at length flowered, though imperfectly, in their stoves at Hackney in 1852, when the figure above quoted was published in Paxton's 'Flower Garden.'

The more perfect specimen now before us flowered in the collection of the late W. G. Farmer, Esq., of Nonsuch Park, Ewell, in October, 1859. It was taken from a plant of which the old pseudobulbs, or stems, were from nine to ten feet long, and the scape six feet, throwing out its noble flowering scape from the base. The species is a native, Blume tells us, of Java and other islands in the Indian Ocean (Mr. Finlayson detected it in Cochin China), and from its vigorous vegetation, and the remarkable size of the flowers, it presents a majestic appearance, quite unrivalled among Orchideous plants. It requires the constant heat of the East Indian house; but it is a shy flowerer, and the great space necessary for its cultivation is another serious drawback.

Descr. *Stems*, or *pseudobulbs*, clustered, erect, five to eight and ten feet high, tereti-compressed, striated below, and a few, large, appressed *scales* there take the place of *leaves*. These latter occupy the rest of the stem, and are distichous, one and a half to two feet long, from a broad, sheathing, equitant base, lorate, acute, coriaceo-

membranaceous, striated. *Scape* nearly the size of one's finger, and from four to six feet long, radical, erect, many-flowered, terete, quite glabrous. *Flowers* distant, expanding from the base upwards on the panicle, each with a large, broad, ovate-lanceolate, concave, greenish *bract*, full an inch long. *Ovary* pedicelliform, as long as the flower is broad, thick, fleshy, terete, four to six inches, almost white: *flower-bud* two and a half inches long, independent of the ovary, clavate. Expanded flower nearly six inches across. *Sepals* and *petals* much spreading and slightly reflexed, undulated, broad-oblong or subobovate, yellow, richly spotted and blotched with deep red-purple. *Lip* small for the size of the flower, three-lobed, an inch and a half long; the lobes obtuse, the side lobes convolute over the column; the disc sulcated, with three plates more elevated in the centre, marked with red streaks, and where the red streaks are, the lines are ciliated: middle lobe entire. *Column* curved a little downwards, semiterete, partially spotted with red.

Fig. 1. Front view of the lip. 2. Column. 3. Pollen-masses and caudicle :—*magnified.*

W Fitch del et lith.

Plate 182.

MILTONIA REGNELLI.

Regnell's Miltonia.

Gen. Char. Sepala explanata, æqualia; lateralibus basi paulo connatis. *Petala* conformia, æquilonga. *Labellum* indivisum, sessile, cum columnâ continuum, lineis quibusdam elevatis, interruptis juxta basin. *Columna* nana, auriculis 2, nunc cum clinandrio cucullato confluentibus. *Stigma* excavatum. *Pollinia* 2, cereacea, postice sulcata; caudiculâ obovatâ; *glandulâ* oblongâ. *Anthera* operculata, membranacea, nuda.—Herbæ *epiphytæ, Americæ tropicæ, pseudobulbosæ,* colore *sæpius lutescente.* Folia *angusta, plana.* Racemi *simplices, radicales,* pedunculo *sæpius squamis arcte imbricato.* Flores *speciosi, lutei vel purpurei.*

Miltonia *Regnelli;* pedunculo paucifloro, bracteis lanceolatis nervosis pedicellis longioribus, sepalis lanceolatis, petalis oblongis, nunc obovatis acutis, labello subpandurato apice quadrato emarginato basi cuneato, callis tribus elevatis parvis intermedio minore, alis columnæ integris falcatis. *Lindl.*

Miltonia Regnelli. *Reichenb. fil. in Linnæa, v.* 22. *p.* 851. *Ejusd. Xenia Orchid. v.* 1. *p.* 133. *t.* 42. *Lindl. Fol. Orchid. Miltonia, p.* 2.

We owe the possession of this plant to the Botanic Garden of Berlin. It was first described and figured by Reichenbach in his 'Xenia,' from plants introduced into Europe from Minas Geraes, Brazil, by Mr. Regnell. It usually flowers in August, and, like the other *Miltonias*, is rather impatient of heat. I believe that all the *Miltonias* will be found to succeed perfectly in what is generally denominated the Mexican-house; the atmosphere of this being drier than that of other Orchid-houses.

Fig. 1. Column:—*magnified.*

W. Fitch del. et lith.

Vincent Brooks, Imp

PLATE 183.

HUNTLEYA CERINA.

Waxy Huntleya.

Gen. Char. Perianthium explanatum, subæquale, sepalis lateralibus basi anticè involutis vix obliquis. *Labellum* planum, unguiculatum, rhomboideum, patens, basi longè fimbriatum, cum basi liberâ productâ columnæ articulatum. *Columna* clavata, apice cucullata, margine alata. *Anthera* bilocularis, mutica. *Pollinia* 4.—Folia *ligulata, disticha.* Flores *axillares, solitarii. Lindl. Bot. Reg. sub t.* 1991.

HUNTLEYA *cerina;* pseudobulbis nullis, foliis cuneato-oblongis acutis pedalibus, pedunculis validis unifloris 2- vel 3-plo longioribus, sepalis petalisque subæqualibus subrotundis concavis carnosis, labello ovato convexo retuso cristâ crassâ semicirculari truncatâ plicatâ, columnâ apice nudâ.

HUNTLEYA cerina. *Lindl. in Paxt. Flow. Gar. v.* 3. *n.* 535, *cum xylo. Bot. Mag. t.* 5598.

PESCATORIA cerina. *Rchb. fil. Xenia, t.* 65.

The first notice of this beautiful plant appeared in the third volume of Paxton's 'Flower Garden' (1852–53), where a description by Dr. Lindley and a woodcut of the flower are given. Dr. Lindley had no hesitation in referring it to the same genus as a plant he had previously described in his 'Sertum' under the name of *Huntleya violacea*, although its column was clavate, while in the latter species that member is remarkably short and thick. And since in other parts of its structure, as well as in habit, it agrees perfectly with the original type of the genus, I have retained Dr. Lindley's name, although another high authority, Professor Reichenbach, has figured it in his 'Xenia' under the name of *Pescatoria cerina.*

The plant was originally discovered by Warszewicz in Veragua, on the volcano of Chiriqui, at an elevation of 8000 feet. Mr. Rucker was the first to flower it, and indeed was almost its sole possessor, until some recent importations made the plant more plentiful. Mr. Fitch's figure was obtained from a plant exhibited, in beautiful condition, by Messrs. Veitch at one of the Tuesday meetings of the Royal Horticultural

Society of South Kensington in June last. It has also flowered at Knypersley, where, although the flowers themselves were larger, the flower-stems were much shorter than those of Messrs. Veitch's specimen; those in Reichenbach's figure are twice the length of either. I have also observed considerable variations in the form of the lip and of the sepals and petals, especially as regards the relative size of the two last.

H. cerina grows slowly, but is easily managed in any house that suits the *Trichopilias*, many species of which are found in the same district with itself. Its flowers are of very long duration.

Descr. A bulbless *epiphyte*, producing tufts of four or five cuneate-oblong sharp-pointed leaves, which are about a foot long. *Peduncles* one-flowered, from two to six inches long, coming up at the base of the leaves, very strong. *Sepals* and *petals* generally nearly equal, the latter more or less unguiculate, an inch and a half long, nearly round, concave, fleshy, of a pale straw-colour. *Lip* yellow, unguiculate, puckered, ovate, convex, retused, bearing at the foot of its disc a very thick semicircular ruff, composed of numerous plaits and folds. *Column* sometimes with a violet or brown blotch near its base, clavate, but with no expansion or hood over the anther.

Fig. 1. Lip, spread out flat. 2. Pollen-masses:—*magnified*.

W Fitch, del. et lith.

PLATE 184.

IONOPSIS PANICULATA.

Panicled Ionopsis.

Gen. Char. Sepala erecta, æqualia, membranacea; lateralibus in saccum connatis. *Petala* sepalis conformia. *Labellum* membranaceum, sepalis longius, columnâ parallelum, limbo reflexo; basi angustatum, auriculis 2 membranaceis intra marginem callisque 2 carnosis intra auriculas. *Columna* erecta, nana, aptera, semiteres, rostello rostrato. *Pollinia* 2, cereacea, sphærica, posticè excavata; caudiculâ lineari, glandulâ obovatâ. *Anthera* unilocularis, rostrata.—Herbæ *epiphytæ, Americæ tropicæ, acaules.* Folia *coriacea.* Flores *in racemis aut paniculis terminalibus dispositi, albi aut violacei. Lindl.*

Ionopsis *paniculata;* foliis lineari-lanceolatis carinatis, scapo paniculato diffuso, sepalis acutis, petalis obtusis apiculatis longioribus, labelli pubescentis limbo rotundato bilobo sepalis multo longiore, auriculis rotundatis, sacco simplici. *Lindl.*

Ionopsis paniculata. *Lindl. in Bot. Reg. sub t.* 1904. *Fol. Orch.* 1852. *Walpers, Ann. t.* 5. *p.* 685.

Épidendre paniculé. *Descourtilz, Epid. Bras. ined. in Bibl. Delessert. t.* 54.

This is by far the finest species of a genus that otherwise comprehends none but insignificant plants. It must also be regarded as the most extensively dispersed. if Professor Reichenbach's supposition, that it is a mere variety of *I. utricularioides* should prove to be well founded, the latter species being diffused over nearly the whole continent of South America. The specimen figured was taken from among a multitude imported from Brazil by Messrs. Hugh Low and Co., of Clapton, and which formed one of the most attractive features of their orchid-houses during the months of October and November last year. There were innumerable varieties, some almost pure white, others white and yellow, and others again—like the subject of the Plate—with a lovely purple spot on the lip. The flowers last for a considerable time, and are very freely produced; indeed, in order to preserve the plants, it is sometimes necessary to destroy the flower-spikes, which, as in the case of the species of *Phalænopsis*, are often out of all proportion to the number and strength of the leaves. The species does best under the same treatment as the more delicate kinds of *Oncidium*, and should be placed either on a block of wood, or, what is far better, on one of those earthenware imitations of a

block of wood to which the name of "branch-orchid pot" is now applied. It is impatient of too much heat and moisture, and will probably be found to succeed in the Mexican-house.

Descr. *Leaves* thick and channeled, two or three clustered together, linear-lanceolate, keeled, about six inches long. *Scape* panicled and spreading, a foot or more long, loaded with almost innumerable flowers of delicate and beautiful texture. *Sepals* sharp-pointed, scarcely more than the eighth of an inch long. *Petals* rather wider than the sepals, but otherwise conformable to them, white. *Lip* very large, pubescent at its base, and with two-lobed, rounded, apiculate limb, almost entirely white in some varieties, while in others it bears on its disk either a patch of yellow or of purple, or of both combined. Here it has two thin rounded auricles within the edge of the lip, and two much more fleshy calli within the auricles themselves. *Column* upright, short, wingless.

Fig. 1. Side view of labellum and column. 2. Front view of column. 3. Pollen-masses. 4. Front view of labellum :—*magnified.*

W.Fitch,del et lith.

Bowers Brooks Imp

Plate 185.

DENDROBIUM LUTEOLUM.

Pale yellowish-flowered Dendrobium.

Gen. Char. (*Vide supra*, Plate 102.)

Dendrobium *luteolum;* caulibus erectis foliosis ramosis, foliis lanceolatis apice obliquis acutis, racemis lateralibus 2–4-floris subæqualibus, sepalis ovato-lanceolatis obtusis, lateralibus in mento longe producto incurvo connatis, petalis conformibus, labelli trilobi lobis lateralibus erectis rotundatis intermedio majore oblongo convexo emarginato, disco tomentoso. *Batem.*

Dendrobium luteolum. *Bateman in Gard. Chron. for* 1864, *p.* 269 *a.*

This new *Dendrobium* is a native of Moulmeine, and was sent with many other fine things to Messrs. Low, of Clapton, by the Rev. C. S. Parish. With the exception of a few reddish streaks on the lip, the flowers are of a uniform pale primrose tint; indeed, I should have called it *D. primulinum*, if that name had not been already appropriated to another and totally different species. The mentum (or spur) is about the length of the ovary, and is curved inwards. The flowers are about two inches across, and are remarkable for their straight margins or edges, which are not waved or curled, as in most *Dendrobia;* they are borne in short lateral racemes that come forth towards the upper portion (not the end) of the stems. It blossoms in the winter months, and its pretty flowers are almost imperishable. Unfortunately the plant has a trick of pushing shoots from the sides or end of its stems instead of sending up fresh growths from their base. When this occurs, the shoots should be removed as soon as they have thrown out any roots, and placed in the same pot with the mother plant, which will in this way soon form a bushy specimen.

Its nearest affinity is with *D. rhombeum.*

Fig. 1. Column and spur. 2. Front view of the labellum. 3. Pollen-masses:—*magnified.*

Vincent Brooks, Imp

Plate 186.

SACCOLABIUM AMPULLACEUM.

Bottle-lipped Saccolabium.

Gen. Char. (*Vide supra*, Plate 130.)

Saccolabium *ampullaceum;* caule brevissimo, foliis crassissimis distichis ligulatis canaliculatis apice truncatis dentatis, racemis oblongis erectis foliis multo brevioribus, sepalis petalisque ovatis patentibus subæqualibus, labello angusto acuminato concavo calcare compresso pendulo duplo breviore. *Lindl.*

Saccolabium ampullaceum. *Lindl. Sert. Orch. t.* 17. *Paxt. Mag. v.* 13. *t.* 49.

Aerides ampullaceum. *Roxb. Fl. Ind. v.* 3. *p.* 476.

This is a neat, compact, and beautiful plant, it is likewise perfectly distinct from any other species of the genus at present known. It was figured so long ago as 1838 by Dr. Lindley, in his 'Sertum,' but his plate was copied from a drawing in the possession of the East India Company. A few living specimens found their way shortly afterwards into collections,—one of which that flowered at Chatsworth was figured in 'Paxton's Magazine,'—but the plant continued exceedingly rare until Messrs. H. Low and Co. received a supply from one of their Indian collectors. The accompanying figure was taken from a plant that flowered at Kew in May 1866.

S. ampullaceum is a native of Sylhet, where it was found growing upon trees by some of Dr. Roxburgh's correspondents. Dr. Wallich met with it near Bemphedy, and it was also gathered in Sikkim by Drs. Hooker and Thomson. Its time of flowering. both in India and in our gardens, is the spring. It grows slowly, rarely producing offsets, but is easily managed. Nothing can be more charming than its bright rose-coloured racemes, which are freely produced, and last long in beauty.

Descr. A dwarf plant, not rising more than six inches high, usually with a simple stem. *Leaves* barely a span long, distichous, very thick, ligulate, with the edges nearly parallel, carinate beneath, channelled above, truncated and irregularly toothed at the apex. *Flowers* of a deep rose-colour, growing in erect, oblong, axillary *racemes*, which

are much shorter than the leaves. *Flower-stalks* and *ovary* together about an inch long. *Sepals* and *petals* nearly equal, ovate, spread out flat and beautifully veined. *Lip* linear, falcate, twice as short as the sepals, channelled, acute, rather turned upwards at the point, with a compressed, straight, slender spur, nearly as long as the flower-stalk; at the base of the lip are two teeth pressed close to the base of the column, and parallel with it. *Column* short, with a small hollowed stigma in front.

Fig. 1. Side view of flower :—*magnified.*

Plate 187.

CYMBIDIUM HOOKERIANUM.

Dr. Hooker's Cymbidium.

Gen. Char. (*Vide supra*, Plate 177.)

Cymbidium *Hookerianum;* foliis lineari-ligulatis acutis bipedalibus, vaginis energice striatis, pedunculo porrecto racemoso grandifloro, floribus illos Cymbidii eburnei æquantibus, sepalis petalisque stellatis oblongis obtuse acutis, petalis paulo angustioribus, labello trifido, laciniis lateralibus basi subsemicordatis, seu æqualibus, antice angulatis, laciniâ anticâ subcordatâ ovatâ transversâ lobulosâ, lineis geminis velutinis a basi disci in basin laciniæ anticæ, labello ceterum hinc illinc subvelutino.—Sepala et petala viridia. Labellum et columna albo-flavida, guttis atropurpureis. *Rch. fil. in 'Gardeners' Chronicle,' Jan.* 6, 1866.

Cymbidium Hookerianum. *Gard. Chron. l. c.*

I have copied from the 'Gardeners' Chronicle' for January 6, 1866, Professor Reichenbach's account of this very remarkable plant, which was by him gracefully dedicated to Dr. Hooker, "with his best wishes and as a gratulation for the first New Year's Day of his Kew directorship." Mr. Fitch's drawing was taken from a plant that flowered in the establishment of Messrs. Veitch, to whom it was sent many years ago by Mr. Lobb. According to Dr. Hooker, it grows wild in the Sikkim Himalaya, having been gathered there by himself in a district where he happened to meet with Lobb, who no doubt obtained his specimens from the same quarter. These flowered at Exeter not long after their arrival, but—owing probably to their having been kept too warm—many years elapsed before they flowered a second time. This, however, they have at length done, thanks no doubt to their having been placed by Mr. Dominy under cooler treatment. The species is epiphytical and should be grown in a large pot, in which, if properly managed, it presents a very striking appearance.

Dr. Hooker, who, it has been already mentioned, saw the plant in its native habitat, is of opinion that it should be regarded rather as a very fine and large variety of *C. giganteum* than as a distinct species. Some such notion had also suggested itself to my own mind, but the question had perhaps better be left in abeyance until we shall have had the opportunity of examining additional specimens. Under any circumstances —*i.e.* whether it be merely a striking variety or a truly distinct species—it will always be worthily associated with Dr. Hooker's name.

Descr.* *Leaves* one and a half to two feet long, acute, strap-shaped, tough and leathery, dilated at the base, where they are exceedingly striated or streaked with two shades of green, much more so than in the ordinary form of *C. giganteum*. *Scape* about the length of the leaves, erect in its lower portion (where it is covered with loose imbricated scales), but nodding from the point where the flowers are placed. *Flowers* from six to twelve, very large (four to five inches across), of a uniform green, the lip only excepted. *Ovaries* an inch and a half long. *Sepals* and *petals* stellate, oblong, obtusely-acute, the petals slightly narrower than the sepals. *Lip* three-lobed, the lateral lobes long, entire, flat, somewhat falcate and very sharp-pointed in front, bordered with fine hairs, the middle lobe crisped and fringed at the margin; on the disk are two upright ciliated lamellæ, parallel or slightly converging, more than half an inch in length; the whole of the lip is of yellowish-white, changed into deeper yellow at the edges, where it is velvety and decorated with rich reddish-purple spots. *Column* clavate, edged, smooth, green, with a few reddish dots.

* The following description is mainly drawn up from a flower furnished by Messrs. Veitch, and varies in some respects from that of Professor Reichenbach.

Plate 188.

CŒLOGYNE CORRUGATA.

Cœlogyne with wrinkled pseudobulbs.

Gen. Char. (*Vide supra*, Plate 104.)

Cœlogyne *corrugata*; pseudobulbis ovatis rugosissimis cæspitosis diphyllis, foliis oblongis membranaceis racemo erecto 3–6-floro longioribus, bracteis cymbiformibus oblongis, petalis sepalisque subæqualibus oblongis acutis, labelli medio tricristati lobis lateralibus acutiusculis intermedio ovato acuminato obtuso. *Lindl.*

Cœlogyne corrugata. *Wight, Icon. t.* 1639. *Lindl. Fol. Orch.*

Although a very accurate representation of this pretty *Cœlogyne* appeared fifteen years ago in Dr. Wight's 'Icones,' it never, so far as I am aware, took its place among our living collections before the year 1863, when some specimens were received from India by the Royal Gardens at Kew. It is found, according to Dr. Wight, near Courtallum, Tulney Mountains (Neilgherries), where it flowers in August and September. It also grows wild in Khasya, according to Lobb. The figure is taken from a specimen that flowered at Knypersley in the summer of 1866. Like many other *Cœlogynes*, it will not thrive in the East Indian house, but is quite at home in the coolest part of the Cattleya house. It should be grown in a pot.

The wrinkled pseudobulbs, which unfortunately are not so well rendered on the opposite page as in Dr. Wight's plate, are almost peculiar to the species.

Descr. *Pseudobulbs* in tufts, ovate, very much (reticulately) wrinkled, two-leaved. *Leaves* about a span long, oblong, subacuminate, rather longer than the racemes. *Racemes* three- to six-flowered. *Bracts* boat-shaped, oblong. *Sepals* and *petals* nearly equal, oblong, acute, pure white. *Lip* three-lobed, lateral lobes smaller and blunter than the central, which is ovate-acuminate; on the disk are three raised parallel longitudinal lines; the limb of the lip is yellow in the inside, marked with orange streaks.

Fig. 1. Column. 2. Lip, seen sideways. 3. Ditto, front view:—*magnified.*

W.Fitch,del et lith.

Vincent Brooks Imp.

PLATE 189.

DENDROBIUM LOWII.

Mr. Low's Dendrobium.

Gen. Char. (*Vide supra*, TAB. 102.)

DENDROBIUM (§ Eudendrobia, nigro-hirsuta) *Lowii;* caule erecto nigro-hirsuto, foliis ovato-oblongis apice obliquis subtus nigro-pubescentibus, racemis densis multifloris (floribus aureis), petalis oblongis obtusis undulatis dorsali duplo longioribus, labello trilobo, lobis lataralibus brevibus lineari-lanceolatis incurvis paullo super basin insertis, intermedii longe unguiculati, limbo subrotundo convexo decurvo barbato, mento infundibuliformi, columna semicylindrica 3-dentata. *Lindl.*

DENDROBIUM Lowii. *Lindl. in Gard. Chron. for Nov.* 30, 1861, *p.* 1046 *a.*

From Dr. Lindley's description of this plant in the 'Gardeners' Chronicle' I quote the following remarks:—"A most attractive species, imported by Messrs. Low, of Clapton, from Borneo, and exhibited by them at a meeting of the Floral Committee of the Horticultural Society. Fragments of what appears to be the same plant occur among Mr. Motley's Orchids (*n.* 201), gathered at Banjarmassing. The flowers are admirably beautiful, produced in dense racemes as many as seven together, and are fully two inches in diameter, of a charming yellow colour, set off in a striking manner by six red lines on the lip, bearing long crimson fringes. The *stem* is upright, about a foot long, covered with black, which also occurs on the under side of the leaves in the shape of fine down. The species is evidently an ally of *D. formosum*, of which it has somewhat the habit, but is slenderer, and has an entirely different flower in structure as well as colour." The plant is no doubt, as Dr. Lindley supposed, abundantly distinct from *D. formosum* but the yellow colour cannot now be regarded as one of its distinguishing marks, some varieties having produced *white* flowers.

It is rather a slow grower, and requires the constant heat of the East Indian house, in which it usually flowers in the autumn or winter months. It grows on trees in exposed places 3000 feet above the sea level. It was discovered in Borneo by Mr. Low's son, to whom Dr. Lindley dedicated it; and well did he deserve the honour.

Fig. 1. Column, lip, and spur:—*magnified.*

W. Fitch, del. et lith

Vincent Brooks, Imp

Plate 190.

BOLBOPHYLLUM RETICULATUM.

Reticulated-leaved Bolbophyllum.

Gen. Char. Sepala erecta, acuminata, subæqualia, lateralibus cum pede columnæ connatis et basi obliquis. *Petala* nana (rarissime sepalis subæqualia). *Labellum* cum pede columnæ articulatum, unguiculatum, sæpius integrum, et posticum. *Columna* nana, antice bidentata v. bicornis. *Anthera* 1- v. bilocularis. *Pollinia* 4, libera, valde inæqualia, nunc in uno connata, nunc per paria cohærentia, altero cujusve paris minuto lobuliformi.—Herbæ *epiphytæ*, rhizomate *repente pseudobulbifero*. Folia *coriacea, avenia*. Racemi *radicales*. *Lindl.*

Bolbophyllum *reticulatum;* rhizomate elongato, squamis amplis imbricatis truncatis vestito, pseudobulbis ovoideis 1-phyllis, folio amplo ovato-cordato acuminato pallide viridi, nervis saturate viridibus nervulisque pulcherrime reticulato, pedunculis brevibus sub-2-floris, floribus magnis, sepalo dorsali petalisque subsimilibus ovato-lanceolatis acuminatis intus purpureo striatis, sepalis lateralibus majoribus concoloribus subfalcatis, labello trulliformi recurvo. *Hook. fil.*

Bolbophyllum reticulatum. ***Bateman, mss.***

A most singular and beautiful plant, certainly among the finest of the genus, whether we consider the size of the flower, its handsome striped sepals and petals, or the extraordinary beauty of the large reticulated leaves. It was discovered by Thomas Lobb in Borneo, and flowered with the employers of that successful collector, Messrs. Veitch, at the Royal Exotic Nurseries, King's Road, in August, 1866. There is nothing at all resembling it in either the Lindleyan or Hookerian Herbaria at Kew, and it may no doubt be taken as an earnest of the Orchideous riches remaining to be discovered in the Bornean forests, especially if you ascend the mountains.

Descr. *Rhizome* elongate, prostrate, simple or sparingly branched, covered with closely imbricating, broadly ovate, acute brown scarious sheathing scales. *Pseudobulbs* solitary, scattered, ovoid, about an inch long, bearing one leaf covered by two or three sheathing scales, like those of the rhizome, but larger. *Leaf* large, three to five inches long, ovate cordate, acuminate, much nerved, the longitudinal and transverse nerves deep green, producing a beautiful reticulation on the paler green of the substance of

the leaf; *petiole* short, stout. *Peduncle* from the base of the pseudobulb, short, stout, curved, one to two inches long, covered with sheathing ovate-acuminate bracts, two-flowered. *Flowers* one and a quarter inch diameter, pale externally, internally white, with stripes of clear red-purple (sometimes broken up into spots) in the sepals and petals internally. *Sepals* arched; dorsal ovate-lanceolate, acuminate; lateral much broader at the base, somewhat falcate and decurved. *Petals* like the dorsal sepal, but smaller and more acuminate. *Lip* trowel-shaped, recurved, cordate, with recurved auricles at the base, rather fleshy, spotted with purple; *claw* slender.

Fig. 1. Ovary, column, and lip. 2. Under side of lip. 3 and 4. Pollen:—*all magnified.*

Plate 191.

CATTLEYA DOWIANA.

Captain Dow's Cattleya.

Gen. Char. (*Vide supra*, Plate 108.)

Cattleya *Dowiana ;* pseudobulbis validis clavatis sulcatis monophyllis, foliis lato-oblongis obtusis, spathâ obtusâ pedunculo 2–6-floro subæquali, floribus speciosissimis, sepalis lanceolatis acutis sessilibus planis, petalis plus quàm duplo latioribus margine contortis obtusiusculis labello subæqualibus, labello maximo obscure trilobo oblongo emarginato crispo disco lævi amplissimo velutino atro-purpureo venis aureis pulcherrime ornato, columnâ subarcuatâ labello ferè obtectâ et labello 3-plo breviore.

Cattleya Dowiana. *Bateman in Gard. Chron., Oct.* 1866. *Bot. Mag. t.* 5618.

This superb Cattleya was originally discovered by Warszewicz in Costa Rica, and by him plants were forwarded to this country; but arriving in bad condition they eventually died. The dried specimens moreover that accompanied the living plants seem to have been mislaid or destroyed, so that during the last ten years doubts had come to be entertained as to the existence of a really distinct species of such unexampled beauty as that which the letters of the veteran traveller described. And in the meantime his name was given to another supposed species respecting which the greatest confusion now prevails, and which, whether or not it be a mere variety of *C. Mossiæ* (*labiata*), is at all events perfectly different from the glorious thing to which even the double plate on the opposite page fails to do adequate justice.

Fortunately for the lovers of fine Orchids the plant, such as Warszewicz originally described it, was rediscovered in 1864 by M. Arce, a zealous naturalist who was engaged to collect birds, insects, and plants, for Mr. Salvin and Mr. Skinner, throughout some of the richest portions of Costa Rica. The plants which Arce sent home were purchased by Messrs. Veitch and Son, in whose establishment at Chelsea one of them flowered for the first time in the autumn of 1865. Beautiful as is Mr. Fitch's drawing, it probably gives but a poor idea of what the plant will ultimately become, for the native specimens in Messrs. Veitch's possession have some of them borne as many as five or six flowers on a scape.

Utterly unlike as are the nankeen and purple colours of our plant to those of every other Cattleya, still as colour alone is scarcely considered a sufficient botanical distinction, and as in the mere form of its flowers *C. Dowiana* comes very near to some of the many varieties of *C. Mossiæ*, there was for a while some doubt on my mind as to whether it might not eventually have itself to be ranked among the number, especially as *C. pallida*, which has been shown (see Plate 108) to be undistinguishable from other forms of *C. labiata*, has been found by Hartweg as far north as Oaxaca. Having lately however had the opportunity of examining additional specimens, I am now fully disposed to believe that it is essentially distinct from all other members of the genus. Be this as it may, it is a worthy plant to bear the name of a gallant officer in the American Packet service, the well-known Captain J. M. Dow, to whom I have great pleasure in dedicating it, as some slight acknowledgment of the many kindnesses shown and the frequent assistance rendered to English naturalists and men of science who have been so fortunate as to come in his way in their passage along the coasts of the Pacific.

C. Dowiana is very easily grown, but the warmest end of the Cattleya house seems to suit it best.

Descr. *Pseudobulbs* eight inches to a foot high, slender at the base but very much swollen in their upper portion, furrowed. *Leaves* one on each pseudobulb, oblong, thick, and rather broad for the genus, from a span to a foot long. *Peduncle* two- to six-flowered, exceedingly stout, about six inches long, proceeding from a *spathe* somewhat shorter than itself. *Flowers* very large and beautiful, nankeen-coloured with the exception of the lip, their total expansion nearly seven inches. *Sepals* lanceolate, acute, sessile, smooth at the edges. *Petals* more than twice as broad as the sepals, about the same length as the lip, somewhat obtuse, very much waved at the margin. *Lip* oblong, crisp, very large and prominent, of a substance resembling dark purple velvet, beautifully and uniformly streaked with golden threads radiating from its centre, where they meet three other golden lines passing longitudinally. It is obscurely three-lobed, the lateral lobes being gathered round so as almost to conceal the column; the central lobe emarginate, very large, with its edges exceedingly curled. *Column* not more than one-third the length of the lip.

W Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 192.

VANDA BENSONI.

Colonel Benson's Vanda.

Gen. Char. (*Vide supra*, Plate 125.)

Vanda *Bensoni;* foliis canaliculatis oblique inæquali-dentatis racemis erectis rigidis multifloris duplo brevioribus, floribus distantibus pedicellis subæqualibus, sepalis petalisque minoribus unguiculatis obovatis obtusis intus guttulatis (nec tessellatis), labello convexo ovato disco trilamellato apice altè bifido subreniformi, auriculis ad basin triangularibus obtusiusculis, calcare conico obtuso.

Vanda Bensoni. *Bateman, mss. Bot. Mag. t.* 5611.

This elegant addition to our list of *Vandas* was discovered in Rangoon and sent to Messrs. Veitch by that zealous naturalist Colonel Benson, after whom I have great pleasure in naming it. It flowered at Chelsea shortly after its arrival in the summer of the present year (1866), though the spikes were of course inferior to those produced in its own country, some of the latter—which are now in the Kew herbarium—having been upwards of half a yard long, and carried as many as fifteen flowers. The length of its spikes, the absence of all tessellation, the spotting and yellow colour of the inside of the flowers, are among the marks that distinguish the species from *V. Roxburghii* and *V. concolor*, to which it is nearly allied. It appears to be a very free grower.

Descr. *Plant* a foot or more high, bearing a compact mass of distichous channelled coriaceous *leaves*, which are obliquely and unequally toothed, a span or more long. *Flower-spikes* upright, many-flowered, much longer than the leaves. *Pedicels* about an inch long, white. *Flowers* not closely arranged, about two inches across: the *sepals* and *petals* (which are smaller than the sepals) unguiculate, obovate, obtuse, white on the outside, and of a yellowish-green on the inside, where they are marked with numerous reddish-brown dots. *Lip* about the same length as the sepals, with two small, triangular, rather blunt side-lobes or auricles at its base, from in front of which it is ovate, convex, traversed by three lamellæ, and terminated by a kidney-shaped, broad, bifid apex, which is of a beautiful violet colour, while the auricles and conical spur at the base are white.

Fig. 1. Lip and column, seen sideways. 2. Ditto, seen in front:—*magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 193.

SARCANTHUS ERINACEUS.

Hairy-stemmed Sarcanthus.

Gen. Char. Perianthium explanatum. *Sepala* et *petala* subæqualia. *Labellum* breve calcaratum, trilobum, carnosum, cum columnâ articulatum; *calcare* intus ½-biloculari. *Columna* erecta, semiteres. *Anthera* bilocularis. *Pollinia* 2, postice lobata, *caudiculâ glandulâque* variis.—Herbæ *epiphytæ, caulescentes.* Folia *disticha, plana v. teretia.* Racemi *oppositifolii.* Flores *speciosi. Lindl.*

Sarcanthus *erinaceus;* pedunculo muriculato echinato racemoso, bracteis triangulis abbreviatis echinulatis, ovariis pedicellatis æquè echinulatis, sepalis oblongis acutis æquè echinatis, petalis ligulatis obtusis, labello excavato tridentato, utrinque sub columnâ plicato, dentibus lateralibus bidentatis, dente medio producto triangulo, calcare retrorso conico-cylindraceo vacuo, gibbere pandurato sub columnâ, columnâ gracili elongatâ, rostello deflexo subulato elongato apice bidentato, caudiculâ ab ovato basi lineari, polliniis in stipite bifido centricè caudiculæ inserto reflexis. *Rchb. in Gard. Chron.* 1866.

Sarcanthus erinaceus. *Bot. Mag. t.* 5630.

Aerides dasypogon. *Hort., non Lindl.*

Sarcanthus Stowellianus. *Bateman, mss.*

The first plant that I ever saw of this pretty *Sarcanthus* was bought, under the name of *Aerides rubrum*, about ten years ago, at one of Stevens's sales. After several years' cultivation, it flowered at Knypersley, and as I first noticed the open blossoms as I was passing through the Orchid houses in company with my lamented friend Hugh Stowell, I called it provisionally after him. I did not, however, describe or collate it at that time, and as I shortly afterwards met with it in Messrs. Low's collection under the name of *Aerides dasypogon*, I too hastily concluded that such was probably its real name, and made no further inquiries into the matter. In the autumn of last year, however, I met with the plant again—and this time under the name of *Sarcanthus erinaceus*—in the Royal Gardens at Kew, where it had been seen by Professor Reichenbach, and named as above by him. This name, which well describes the peculiarly shaggy or hedgehog-like appearance of the flower-stems, must therefore stand. It is a rare plant and, always excepting *Saccolabium giganteum*, the slowest grower of its tribe. My plant, which is about four inches high, has at length begun

to branch and—as the branches all flower freely—is already an attractive object;—in our grandchildren's days it will be quite charming! It flowers freely during the summer months in the East-India house. Its introducer, both to Kew and to Clapton, was the Rev. Mr. Parish, who no doubt met with it in Moulmeyne.

Fig. 1. Front view of flower. 2. Side view of ditto :—*magnified.*

Plate 194.

ONCIDIUM SERRATUM.

Serrated Oncidium.

Gen. Char. (*Vide supra*, Plate 154.)

Oncidium *serratum*; pseudobulbis ovalibus elatis diphyllis, foliis erectis rigidis acutis basi angustatis canaliculatis, paniculâ pauciflorâ brevioribus, sepalis serrato-crispatis, dorsali reniformi, lateralibus multo longioribus obovatis patentissimis, petalis ovatis acutis serrato-crispatis conniventibus, labello multo minore hastato, laciniis acutis intermediâ lineari obtusâ medio constrictâ lateralibus acuminatis triplo minoribus (cristâ depressâ crenulatâ), columnæ alis subulatis ascendentibus.

Oncidium serratum. *Lindl. Sert., Rchb. in Walpers' Ann. v.* 6. *Bot. Mag. t.* 5632.

Oncidium diadema. *Hort.*

I was much struck with this very remarkable *Oncidium*, which I had the good fortune to see in flower in the Bishop of Winchester's collection at Farnham Castle, in December last. It has the colour and somewhat the appearance of *O. crispum*, but the flowers are tossed about after a strange and fantastic fashion, which will no doubt become still more *prononcée* as the plant gathers its full strength and sends forth twining scapes nine or ten feet long. It belongs to a peculiar group that was at one time regarded as a distinct genus, *i. e. Cyrtochilum*, but which is now more properly considered a subgenus of *Oncidium*. Some of them — the *Cyrtochilum volubile* of Pœppig for example—have stems twenty feet high. Mr. Linden was the introducer of the present plant, which he sold under the unwarranted name of *O. diadema* in Stevens's rooms. It is a native of Peru, and must be regarded as a moderately "cool" Orchid.

Descr. *Pseudobulbs* tall and oval, bearing one or two long, rigid, erect, acute *leaves*, which are narrowed at the base and canaliculate. *Panicle* lax, many-flowered, much longer than the leaves (in wild specimens nine or ten feet long). *Sepals* with crisp and serrate margins, the upper one kidney-shaped, the lateral ones very much longer, obovate and spread open, of a brown chocolate colour, tipped and margined

with yellow. *Petals* same colour as the sepals, than which they are much shorter, ovate, acute, connivent. *Lip* very small, hastate, the side portions being acuminate and three times less than the central, which is linear, obtuse, and narrowed in the centre, with a depressed, serrate, or crenulate crest; the colour is similar to that of the sepals and petals, with more yellow about the crest. *Column* with awl-shaped, ascending wings.

Fig. 1. Front view of lip and column:—*magnified.*

W. Fitch del. et lith.

Plate 195.

DENDROBIUM HILLII.

Mr. Hill's Dendrobium.

Gen. Char. (*Vide supra*, Plate 102.)

Dendrobium *Hillii;* caulibus valde elongatis articulatis, articulis 3–4-uncialibus teretibus plurisulcatis, foliis 4–6 ellipticis vel oblongis crasso-coriaceis atro-viridibus enerviis, racemo pendulo pedali et ultra 4 uncias lato, floribus numerosissimis sepalis e lata basi sensim subangustè attenuatis, petalis linearibus, labello oblongo transversim fusco-lineato, lobo medio orbiculari, disco subbicarinato.

Dendrobium Hillii. *Bot. Mag. t.* 5261.

In his notice of this plant (1861) Sir William Hooker wrote as follows:—"Many years ago, Mr. J. Smith assures me, living samples of this fine *Dendrobium* were sent from Moreton Bay to the Royal Gardens of Kew, with an opinion expressed that it might possibly be the *D. undulatum* of Brown's Prodr. p. 332. I do not find that they ever flowered: but one thing is certain, that I possess in my herbarium a specimen of the true *D. undulatum* of Mr. Brown, with the correct name in Mr. Cunningham's handwriting; and another specimen from Albany Island, from A. C Gregory (see F. Mueller's Fragm. Phytogr. Austr. fasc. 4. p. 87); and also from Port Curtis, gathered by Mr. M'Gillivray during the voyage of the 'Rattlesnake' (1847); it is a very different species from that now under consideration. The *D. undulatum* has, as its name would imply, singularly undulated petals and sepals of very lurid colours, and sharp segments to the lobes of the lip, and it is also a native of Java. Dr. Lindley has shown that his *D. discolor*, from the latter country, figured in Bot. Reg. for 1841, tab. 52, is identical with Mr. Brown's *D. undulatum*."

The present plant must then be considered a new species; and as our living specimens were derived from the very zealous botanist and superintendent of the Botanic Garden at Moreton Bay, Mr. Walter Hill, Sir William dedicated it to him. Even without the flowers this plant standing by the side of *D. speciosum* may be at once recognized as distinct, in consequence of the greater length of the pseudobulbs or stems and of the leaves. The dense drooping racemes of *D. Hillii* and the longer and more

tapering sepals, together with the long, narrow, linear petals, are additional points of distinction.

It requires, as might be expected, more heat than *D. speciosum*, but must have, like that species, a decided season of rest in a dry house.

Fig. 1. Flower, front view. 2. Column and lip. 3. Front view of the lip. 4 and 5. Pollen-masses :—*all more or less magnified.*

W Fitch, del. et lith

Vincent Brooks, Imp.

Plate 196.

MESOSPINIDIUM SANGUINEUM.

Rosy Mesospinidium.

Gen. Char. Perigonium subcarnosum, clausum. *Sepalum* summum lanceolatum; *sepala* lateralia connata, apice bifida, laciniâ utrâque lanceâ basi subsaccato labello supposità; *petala* triangulo-lanceolata, acuta, sepalis basi vix imbricantibus. *Labellum* cuneatum, obcordatum, limbo revoluto, carinæ duæ, unguem marginantes, eboraceæ, nunc anticè lobatæ canalem velutinum inter se linquentes, lamellâ bilobâ depressâ antepositâ, subimmobile. *Columna* semiteres, anticè profundè excavatum. *Androclinii* limbus utrinque dependens; rostellum ascendens, acuto-triangulum, bicuspidatum. *Anthera* unilocularis, anticè retusa, medio cuspidata. *Pollinia* globosa, posticè minutè perforata. *Caudicula* linearis, basi latior; glandula lancea. *Character ex Rchb. Walp. Annales, v.* 5. *p.* 6.

Mesospinidium *sanguineum;* pseudobulbis ovalibus compressis nebulosis diphyllis, foliis cuneato-ligulatis acutis, racemis secundis ramosis foliis longioribus, bracteis squamæformibus minutis, sepalis oblongis acutis, lateralibus medium versus bifidis, sepalis cuneato-ovato-acutis, labello lingulato acuto, lateralibus erectis, carinâ lineari per disci basin superiorem apice sc. medio labello divergenti bicruri, androclinio minutè lobulato.

Mesospinidium sanguineum. *Rchb. fil. Walp. Annales, l. c. Bot. Mag. t.* 5627.

A very pretty plant, with nodding racemes in the way of those of *Rodriguesia secunda*, but larger and handsomer. Unlike the latter species, which is found abundantly at the embouchure of the Amazon river, and which therefore luxuriates in a great degree of heat and moisture, this *Mesospinidium* is met with at a great elevation, and consequently in a cool climate, among the Peruvian and Quitensian Andes, whence descend some of the largest tributaries of that most magnificent of all streams. Although discovered by Jameson more than twenty years ago, and subsequently met with by Warszewicz, it does not appear to have ever reached this country alive before the year 1866, when plants of it were received in excellent condition from Ecuador by the Messrs. Backhouse, of York, who exhibited a flowering specimen of it—from which the Plate was derived—at one of the Tuesday meetings at South Kensington in November last. It appears quite at home in what may conveniently be termed the "Peruvian house," as meant to include the coolest and dampest section of temperate Orchids, while the "Mexican house" would indicate a climate somewhat warmer and drier than the last, but still cool.

As a genus, *Mesospinidium* comes near to *Odontoglossum*, from which a superficial observer might fail to distinguish it. Professor Reichenbach, the founder of the genus, would also make it embrace the genera 'Ada' and 'Abola' of Lindley, a view in which I find myself at present unable to concur.

Descr. An epiphyte, with compressed, prettily-mottled oval two-leaved *pseudobulbs*. *Leaves* ligulate, sharp-pointed, shorter than the many-flowered, drooping, slightly-branched *flower-stem*. *Bracts* minute, scale-like. *Sepals* oblong, acute, the side ones joined at the base—for more than half their length. *Petals* cuneate, ovate, acute, of a firm waxy substance, and (like the sepals) of a uniform warm rosy tint. *Lip* lingulate, sharp-pointed, its sides erect, its middle lobe recurved, with a two-limbed diverging process at the base. The lip at its point is of the same rosy tint as the sepals and petals, but fades into white in its lower portion. *Column* white, slightly lobed.

Fig. 1. Side view of lip and column. 2. Front view of lip. 3. Ditto of column. 4. Pollen-masses:—*magnified*.

W. Fitch, del. et lith.

Vincent Brooks, imp.

PLATE 197.

DENDROBIUM DIXANTHUM.

Double-tinted yellow Dendrobium.

Gen. Char. (*Vide supra,* PLATE 102.)

DENDROBIUM *dixanthum;* caule erecto teretiusculo basi valde tenui stipitato sesquipedali, racemis brevibus lateralibus 2–5-floris ex caulibus vetustis, mento parvo obtusangulo, sepalis lanceolatis acutis, petalis oblongis acutis sublongioribus margine minutè denticulatis, labello ab ungue lato hastato subquadrato obtusangulo antrorsum dilatato, medio antice minutè emarginato, toto margine minutè serrulato denticulato, carinulâ transversâ per unguis basin, nervis fere omnibus lineis cristularum obtectis.

DENDROBIUM dixanthum. *Rchb. fil. in Gard. Chron.* (1865) '*New Plants,*' *n.* 301. *Bot. Mag. t.* 5564.

Moulmeyne, that inexhaustible mine of new *Dendrobia*, is the native country of this pretty plant, which was discovered in 1864 by the Rev. C. S. P. Parish, and sent to Messrs. H. Low and Co., of Clapton. It grows rapidly and flowers freely (in the early summer) under ordinary treatment. Unfortunately the leaves fall off the stems—old and young alike—before the flowers have had time to expand,—a circumstance that detracts materially from their effect.

In Professor Reichenbach's otherwise accurate description of the plant in the 'Gardeners' Chronicle' he speaks of the flowers as appearing singly on the side of the old stems, a mistake which the examination of additional examples—produced at Knypersley and elsewhere—has enabled me to correct. The name is in allusion to the two tints of yellow which are found in its blossoms.

In the form of its leaves—which are grassy and very sharp-pointed—this species resembles *D. aduncum*, from which however it is otherwise entirely distinct.

DESCR. *Stems* upright or nearly so, smooth, somewhat club-shaped, about half a yard high. *Leaves* grassy, three or four inches long, very sharp-pointed, falling off before any flowers appear. *Racemes* short, two- to five-flowered. *Sepals* (which like the petals are a pale yellow) lanceolate, sharp-pointed, forming at their base a short mentum or chin. *Petals* oblong, acute, less than an inch long, a little wider than the

sepals, faintly toothed at the margin; *lip* spreading out in front from a broad basilar nearly square blunt-angled claw, a little serrated along the whole extent of its margin, traversed by a bar across its base, of the same colour as the petals, excepting a deep orange tint on its disk.

Fig. 1. Column and claw of labellum. 2. Lip unexpanded.

Vincent Brooks, Imp.

Plate 198.

LYCASTE GIGANTEA.

Gigantic Lycaste.

Gen. Char. Flores ringentes, petalis sæpe dissimilibus, in mentum breve productis. *Labellum* medio appendice transverso integro v. emarginato auctum. *Columna* elongata, semiteres, sæpius pilosa. *Pollinia* 4, per paria caudiculæ angustæ elongatæ adnata; *glandulâ* parvâ subrotundâ; rostello subulato.—Herbæ *pseudobulbosæ;* foliis *plicatis.* Scapi *erecti, radicales uniflori.* Flores *semper speciosi, bracteâ magnâ spathaceâ suffulti. Lindl.*

Lycaste *gigantea;* pseudobulbis maximis oblongo-ovatis glabris subcompressis 2–3-phyllis, foliis oblongo-lanceolatis acuminatis plicatis scapo vaginato unifloro longioribus, sepalis ovato- vel lineari-lanceolatis obtusiusculis, lateralibus falcatis petalis lanceolatis brevioribus, labelli oblongi lanceolati trilobi laciniis lateralibus elevatis acutis intermediâ serratâ panduriformi concavâ apice integrâ recurvâ multo brevioribus, callo unico emarginato sellæformi per hypochilium decurrente.

Lycaste gigantea. *Lindl. in Benth. Pl. Hartweg. p.* 153. *Orch. Linden, p.* 21. *Bot. Reg. v.* 39. (1843) *p.* 15; *Id. v.* 30. *Misc.* 48. *Bot. Mag. t.* 5616.

Maxillaria Heynderycxii. *Morr. Ann.* 1845–9.

This stately *Lycaste* is very extensively diffused, having been found in Central America by Hartweg,—near Santa Martha by Purdie,—and in the forests of Merida, at an elevation of 5–600 feet, by Linden. As might under such circumstances be expected there are many varieties differing in the size and colour of the flowers, and also—though to a less extent—in the size and form of the sepals and petals; the latter are usually of a yellowish-olive, while the velvety lip is of a dark rich maroon bordered with orange. The specimen figured was exhibited by Messrs. Veitch at South Kensington in July, 1866.

All the *Lycastes* may be regarded as subterrestrial, and should therefore be accommodated with large pots. They are readily grown in a moderate temperature, but prefer the shadier parts of the Orchid-house. With the exception of *L. Skinneri*—now such a universal favourite—*L. gigantea* is, perhaps, the best of its race.

Descr. *Pseudobulbs* very large (sometimes six inches high), oblong-ovate, smooth, and slightly compressed, bearing two or three large, deeply plicated oblong-lanceolate acuminate *leaves*, which are from half a yard to two feet long. *Scape* upright, one-

flowered, partially sheathed (the upper sheath unguiculate and same length as the sepals), usually shorter than the leaves. *Sepals* ovate, or sometimes linear-lanceolate, rather blunted (those at the side being falcate), of a warm yellowish-olive. *Petals* lanceolate, rather shorter than the sepals and of the same olivaceous hue. *Lip* oblong-lanceolate, 3-lobed, the lateral lobes being elevated, acute, and much shorter than the central one, which is panduriform, serrated at the edges, depressed along the centre, but with its apex recurved; the lower portion of the lip is occupied by a transverse saddle-shaped emarginate callus; the colour of the lip is usually a rich maroon bordered with a narrow orange rim, the whole having quite the appearance of velvet.

Fig. 1. Lip, *nat. size.*

W. Fitch, del et lith.

Vincent Brooks, Imp.

Plate 199.

NOTYLIA BICOLOR.

Two-coloured Notylia.

Gen. Char. Perianthium explanatum, æquale; *sepalis* 2 lateralibus connatis labello suppositis. *Labellum* liberum, ecalcaratum, patentissimum, integrum, medio callosum. *Columna* erecta. *Stigma* rimâ verticali. *Anthera* dorsalis, unilocularis, cum stigmate parallela. *Clinandrium* planum, anticè callosum, posticè marginatum. *Pollinia* duo integra, caudiculâ elongato-cuneatâ, glandulâ minutâ.—Herbæ *epiphytæ Americanæ.* Folia *equitantia vel plana.* Spicæ *radicales.* *Lindl. Gen. et Sp. p.* 192.

Notylia *bicolor;* foliis equitantibus ensatis spicis nutantibus apice racemosis multi-(10–20-)floris duplo brevioribus, sepalis lineari-setaceis (inferiora imâ basi coalita) albis, petalis paulo latioribus brevioribus lazulinis; labello libero breviter unguiculato ligulato ante apicem sagittato, apice setaceo ecarinato; columnâ medio angulatâ labello duplo breviore, antherâ maximâ.

Notylia bicolor. *Lindl. in Benth. Plant. Hartw.* 1842. *p.* 93. *Rchb. Xen. Orch. v.* 1. *p.* 46.

This little Orchid is a perfect gem. It was first discovered in Guatemala by Mr. Skinner, and afterwards by Hartweg in the mountains of Comalapan, where it grows upon oaks. In its colouring it is quite unlike the other dozen or more species of *Notylia*, which are generally of a greenish-white, and, except as botanical curiosities, not worth growing.

Notylia bicolor has been established at Knypersley for more than twenty years on a small branch of the Cork-tree Oak, on which it never fails to flower profusely in the autumn. It should be grown near the light at the cooler and drier end of the Cattleya-house. The flowers continue a long time.

Descr. *Whole plant* often not more than an inch and a half high. *Leaves* generally about five, equitant, stiff, acuminate, slightly scimitar-shaped, scarcely half the length of the flower-spikes. *Flower-spikes* drooping, two or three inches long, very slender and graceful, bearing (on their upper portion) from ten to twenty elegant little flowers. *Sepals* setaceous (the two lower ones joined together), white. *Petals* rather wider than the sepals, lilac, with blue spots towards their base. *Lip* free, narrow.

slightly unguiculate, arrow-shaped near its apex, ecarinate, resembling the petals in colour. *Column* about half the length of the lip, angular near the middle. *Anther* very large, overlying nearly one half of the column.

Fig. 1. Flower, seen in front. 2. Ditto, seen sideways. 3. Side-view of lip and column. 4. Lip. 5 and 6. Pollen masses and gland :—*magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Imp.

Plate 200.

CYPRIPEDIUM SCHLIMII.

Schlim's Lady's-slipper.

Gen. Char. (*Vide supra*, Plate. 101.)

Cypripedium (Selenipidium) *Schlimii;* foliis coriaceis ligulatis acutis subpedalibus pedunculo hirsuto nunc ramoso brevioribus; bracteis triangulis ancipitibus, ovario velutino, sepalis ovatis obtusis, superiore ovato, extus sericeo, inferiore subæquali (vel paulo majore) apice contracto cucullato, petalis sepalo summo majoribus, inferiori subæqualibus; labello elliptico-saccato ostio angusto; staminodio ovato pandurato apiculato, stigmatis labio superiori triangulo, inferiori retuso lobato. *Ex Reichenbach.*

Selenipidium Schlimii. *Rchb. in Pescatorea, t.* 34. *Xenia Orch. t.* 44. *Bot. Mag. t.* 5614.

This pretty New Granada *Cypripedium* bears the name of its discoverer, M. Schlim, one of M. Linden's most zealous collectors, who found it in "moist places," in the neighbourhood of Ocaña, at an elevation of four thousand feet above the sea-level. It first flowered in M. Linden's establishment in 1854. It was afterwards met with near La Cruz by Purdie, and on "dry banks" (!) according to the memorandum in the Hookerian herbarium. Possibly, however, the different season of the year at which the plant was gathered by the respective collectors may explain the seeming discrepancy. In this country it is still a rare plant, though it is easily grown in a mild temperature, especially if screened from the direct rays of the sun. It blooms in the late summer and autumn months, always—when in vigour—producing flower-stems with at least one lateral, a peculiarity that is not represented in the figure, and which does not exist in the dried specimens. The drawing is taken from a plant exhibited at South Kensington in August, 1866, by Mr. Bull.

As all the species of *Cypripedium* that have hitherto been found in intra-tropical America have in common the remarkable peculiarity of a three-celled ovary, Professor Reichenbach is anxious to raise them—under the name of *Selenipidium*—into a separate genus; but however loth I may feel to differ from my distinguished friend, I cannot as yet see my way to accepting *Selenipidium*, except as a subgenus, in which latter form it may very conveniently stand. The strong family resemblance between

such plants as *C. lævigatum* from the Old World, and *C. caudatum* from the New, makes it exceedingly difficult to believe they can be essentially different in structure.

There are still at the very least half-a-dozen noble *Cypripedia* to introduce from America south of the equator. Two of these (from the Quitensian Andes) are well figured in Reichenbach's 'Xenia,' under the name of *Selenipidium Hartwegii* and *S. Boissierianum*. As nothing so fine has yet reached us from the eastern hemisphere, we cannot but hope that some enterprising nurseryman will, ere long, add them to the treasures already in our stoves.

Descr. A stemless terrestrial plant. There are from four to six leathery ligulate sharp-pointed *leaves*, a span to a foot long, from the centre of which issues the hirsute *flower-stem*, which is longer than the leaves, often branched, and generally bearin about half-a-dozen flowers, of which not more than two or three are usually in perfection at the same time. *Bracts* triangular, flattened, more than half the length of the ovary, which is itself covered with soft velvety hairs. *Sepals* less than an inch long, ovate-obtuse, nearly uniform, but the lower one is slightly larger, hooded, and contracted at top. *Petals* rather larger than the upper, or about equal to the lower sepal, white (like the sepals), with streaks or spots of crimson on the inner side, and a faint dash of crimson behind. *Lip* formed of a large swollen elliptic bag or slipper with a contracted opening, white behind, but with a large blotch of deep rich crimson in front. *Sterile stamen* yellowish in front, ovate, panduriform, acuminate, having the upper lip of the *stigma* triangular, and the lower lip of the same bent backwards, and lobed.

Fig. 1. Side-view of staminodium (sterile stamen). 2. Front view of ditto :—*magnified*.